

A

PRACTICAL TREATISE

OF

DISEASES OF THE

OF

URINARY & GENERATIVE ORGANS

(IN BOTH SEXES.)

Illustrated with Woodcuts and Coloured Plates.

PART I. NON-SPECIFIC DISEASES.—PART II. SYPHILIS.

BY

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SOCIETIES OF LONDON.

Third Edition.



LONDON:

JOHN CHURCHILL, NEW BURLINGTON STREET.

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LONDON:
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A
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DISEASES OF THE
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PREFACE TO THE THIRD EDITION.

IN the présent edition I have recast the greater part of the work, and have introduced several new chapters. These alterations and additions were rendered necessary, not only by the accumulation of important cases in my note-book, but also by the valuable microscopical and clinical researches which have been made in France and Germany.

The illustrations, it will be observed, are mostly new. The coloured plates, which in former editions were collected into a separate atlas, are now incorporated with the work.* They have been printed in chromo-lithography, under my own superintendence, by Mr. V. Brooks, from water-colour drawings of carefully selected cases, executed by the most eminent French artists. It is hoped, that with the other new illustrations, they will materially add to the usefulness of the book.

A copious table of contents and an entirely new index have been added.

My desire has been to collect together and embody in this treatise the latest discoveries and researches on the subject of venereal diseases, together with my own investigations down to the present day ; and at the same time, besides the alterations and additions necessary for that purpose, to make such others as, on careful consideration, seemed likely to render the book more generally useful to the student and the practitioner. Among the most important of these are, a discussion of the question whether there is more than one virus capable of producing specific disease ; remarks on the real significance of induration ; a description of the microscopical appearances of gum-mata and tertiary symptoms ; additional tables of the mortality from syphilis, &c. ; as well as the latest views on the subject of rape.

I am not without hope that a more extended and scientific knowledge of the difficult subjects of which this book treats, may tend to place in a more practical and philosophic light the great social questions affecting public morals. To know the whole truth concerning the evils that spring from those instincts which, though implanted in us for the highest purposes, have been and daily are so much misused, is to lay a firm foundation upon which to base a remedy for these evils.

In the hope that I have to some extent succeeded in the above objects, I now commit this third edition to the profession.

17, *Queen Anne Street, Cavendish Square,*
July, 1860.

*The plates may still be obtained separately.

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DESCRIPTION OF PLATES.

(Coloured.)

PLATE I.

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|--|------|
| FIG. 1. BALANITIS | 41 |
| <p>The general character of balanitis is clearly represented in this plate. It was impossible to say if sexual intercourse, or a want of cleanliness was the cause. The general erysipelatous redness of the glans, as well as the excoriated appearance so often to be met with in this affection, are well shown.</p> | |
| FIG. 2. VEGETATIONS | 41 |
| <p>The subject of this complaint was a young man twenty-four years of age. He stated that he had never had either gonorrhœa or chancres. The appearance of the complaint is well represented; the clusters of the granules being very florid, each granule presenting a conical appearance, though collected into masses.</p> | |
| FIG. 3. HERPES | 41 |
| <p>Herpes in its various stages is delineated in this plate; commencing as a vesicular disease, its vesicles may ulcerate, and assume all the physical characteristics of chancre. The five or six vesicles will be seen on distinct patches of inflamed skin, differing in this respect from all other vesicular eruptions.</p> | |
| FIG. 4. ECZEMA | 41 |
| <p>The appearances as seen in this plate are very characteristic of the affection; namely, the exudation of a serous fluid forming little scales, and the crevices are distinctly seen running between these little lamellæ, resulting from the drying of the exuded fluid. The history of the case was obscure; the patient advanced in life.</p> | |

PLATE II.

- | | |
|--|-----|
| FIG. 1. INFLAMMATION OF OS UTERI | 211 |
| <p>The annexed plate was taken from a remarkably well-formed female, in the Hôpital de Lourcine, Paris. The drawing represents the speculum introduced, the patient lying on the bed, and supporting the handles of the instrument. She had led a very dissolute life for a long period, although only twenty-one years of age. The nipple shape of the os uteri, and its transverse opening, are well seen, and prove that she had never been impregnated. The increased redness of the vagina and os tincæ indicate inflammation which had existed only a few days. She stated that this was her first venereal complaint, and that she had never been prevented from following her avocations. The menstrual function was performed regularly; and she would have been unaware of any disease existing, had it not been from a slight pain in making water, and several persons having contracted disease from her during the few preceding days.</p> | |
| FIG. 2. LEUCORRHŒA | 211 |
| <p>This affection occurred in a young girl, a Belgian by birth, seventeen years of age, of a lymphatic temperament. She had been placed as servant to wait upon an old lady in Paris, and entered the hospital for a discharge. She stated that previous to her arrival in Paris she had used much exercise in the open air, but during the last few months had hardly ever left the house, and lived in a very crowded and damp situation. The condition of the os tincæ in young females is well shown, but the mucous</p> | |

membrane is paler than usual. The artist has very correctly represented the glairy white-of-egg-like discharge proceeding out of the os uteri, in which we occasionally meet with globules of pus, a secretion very different from those witnessed in the other forms of blennorrhagia.

PLATE III.

FIG. 1. . . . EROSIONS 190

The subject of this drawing had suffered many months from a greenish purulent discharge. She was a married woman, and attributed it to a disease which her husband had contracted about the same period. The introduction of the instrument was not attended with much pain. The characters of the excoriated condition of the epithelium, and the colour of the secretion, show the analogy which it bears to balanitis in the male.

FIG. 2. . . . GRANULAR VAGINITIS 190

This granular appearance of the os uteri and vagina is a very marked instance of what is often to be met with in the hospitals of Paris and London; though generally in a less degree. The subject of it was a short stout female servant; she stated that a discharge from the vagina had appeared eight months previously, and had continued to increase. The introduction of the instrument was very painful. The secretion was purulent, of a green colour, of the consistence of cream, and so abundant that it ran out of the speculum. The analogy between this disease and the granular condition of the conjunctiva in chronic affections of that membrane, cannot escape the notice of the surgeon.

PLATE IV.

ULCERATION OF THE OS UTERI 208

This plate was taken from a female, the wife of a shoemaker at Tours; she came to Paris in consequence of a discharge which had existed twenty months. This patient attributed it to abortion which occurred about that period; her husband, she stated, had suffered from several successive venereal complaints. Inoculation was tried on several and separate occasions, by M. Vidal de Cassis and myself, but the inoculated point healed in twenty-four hours, and as we always failed in producing the characteristic pustule, we concluded that these ulcers were not specific.

PLATE V.

FIG. 1. . . . SOFT CHANCRE 270

The original drawing was taken at the Venereal Hospital, Paris, from a patient forty years of age. Connexion had taken place six weeks previously. The patient had continued his usual occupation (that of a blacksmith) until two days before entering the hospital. The character of simple chancre is well indicated. The sore is on the whole circular in shape. There is some loss of substance. The edges of the sore are neither elevated nor indurated, but only slightly œdematous, with a red areola. The bottom as well as the sides of the sore are covered with tenacious yellow lymph.

FIG. 2. . . . INOCULATION 270

The letters A, B, C, D, E, F, G, point out the progress of the artificial chancre produced by inoculation on the thigh with the secretion of fig. 1; A represents the inoculated point as it appeared six hours after the operation, the other letters show its state at intervals of twenty-four hours. Letter H is the chancre on the thigh about the tenth day.

FIG. 3. . . . SECONDARY SYMPTOMS 433

This drawing represents the way in which secondary symptoms on the skin heal. The central part shows marks of healing. The circles may intersect one another, giving rise to various varieties in cicatrization.

FIG. 4. . . . FOLLICULAR CHANCRES 276

Represents a case similar to that of Mr. H., detailed at page 277. The drawing was taken two days after the appearance of the affection, and ten

days after connexion. Gonorrhoea, it will be observed, co-exists ; the pus is seen issuing from the urethra. The principal object, however, is the development of the virus in the follicles on the glans, resembling the appearance seen in fig. 2 marked A B.

FIG. 5. . . URETHRAL CHANCRE 370

We have in this plate a front view of the glans penis, the fingers of the assistant forcing open the meatus so as to show the little ulcers in the urethra symmetrically disposed face to face. The little sores are seen covered with an adherent yellow secretion ; beyond the chancres, the urethral mucous membrane is observed perfectly sound.

PLATE VI.

FIG. 1. . . PHAGEDENIC CHANCRE 313

This is the uncovered glans penis delineated in fig. 2 ; the phagedena is seen extending rather in breadth than in depth ; no induration accompanies it ; but we observe some œdema around the ulceration. The analogy of ulcerations in the same individual is noticeable.

FIG. 2. . . VIRULENT BUBO 382

This drawing was taken from a patient under the care of M. Ricord. A mason by trade ; twenty-nine years of age. On entering the hospital, this patient's constitution appeared broken down by the combined effect of dissolute habits and poverty. A thin ichorous discharge flows from under the prepuce, from which a piece of lint, soaked in opium, is seen projecting. A distinct chord was felt, extending upwards in the direction of the ganglionic bubo, which commenced as a pimple. It was impossible to collect dates from this person.

FIG. 3. . . GANGRENOUS CHANCRE 312

This affection occurred in a young man twenty years of age, a bargeman on the Seine, who drank freely. He stated that eighteen days previous to his admission, he had had connexion with a prostitute at Rouen ; fourteen days afterwards a black spot showed itself on the upper part of the prepuce, which had become swollen and red, and had rapidly increased to the extent seen in the drawing. The whole of the prepuce was destroyed in the succeeding thirty-six hours.

FIG. 4. . . INDURATED PHAGEDENIC CHANCRE 336

This patient, a tailor by trade, twenty-three years of age, of a beautiful transparent complexion, stated that six weeks previously he had contracted chancres. These healed under simple treatment, and the cicatrix after becoming indurated, subsequently turned red. A sore then began in the centre, which has since been extending ; a similar sore existed on the other side of the glans. The molecular gangrene is very marked, and the transparent indurated circle around it, elevated and distinct from the surrounding skin, is well seen.

PLATE VII.

MUCOUS TUBERCLES, CONDYLOMATA 433

The disease represented in this drawing occurred in a labourer of good constitution, twenty-four years of age. He stated that eight months previous to entering the hospital he exposed himself to contagion, and a bloody discharge flowed from the urethra ; four months later, eruptions appeared on the skin, similar to those on the thigh. Six weeks prior to the period at which the drawing was taken, the mucous tubercles appeared on the scrotum, and around the anus, as the patient stated, in consequence of sitting on wet straw. He had resided in the country, and had not employed either local or general treatment. The case thus illustrates the natural history of syphilis. The appearance of the condylomata occurring on various parts is worthy attention. On the prepuce they are very superficial ; looking like excoriations or superficial chancres ; on the scrotum they assume a somewhat papular appearance ; around the anus they look like soft mucous or granular flat masses, raised above the surface of the surrounding skin ; their surface is covered with a peculiar yellow lymph. On the body various modifications of

secondary symptoms are seen ; they are placed, in the drawing, on the thighs, but they existed on various parts of the body.

PLATE VIII.

FIG. 1. . SECONDARY AFFECTION OF THE THROAT. . . 449

This patient was under the care of Mr. Stanley at St. Bartholomew's Hospital. He stated that four or five months previously, he contracted chancres, but succeeded in curing them with some aperient medicine. About Christmas he first perceived eruptions on the scalp, and his throat soon after became sore. In the plate the affections of the skin and the mucous membrane are seen to pass insensibly one into the other. In fact, the white and bleached superficial excoriation of the throat answers to the syphilitic lepra seen on the body. The speculum oris allowed us to gain a good view of the back part of the throat.

FIG. 2. . TERTIARY AFFECTION OF THE THROAT. . . 449

The subject of this complaint was a young girl who had led a very dissipated life. About fifteen months previous to the time the drawing was made, she had had primary symptoms, and had been in various hospitals, but I could not learn that she had ever taken mercury. The principal features of the disease are well seen. The absence of papillæ on the tongue, where ulceration had previously existed, excavated ulcers covered with a pulpy secretion, and surrounded with a red areola, bespeak at once the tertiary symptoms ; this is made more evident by the occurrence of rupia, which was present on various parts of her body.

Plate I.—Uncoloured.

VARIETIES OF NORMAL CONFORMATION OF HYMEN. . . 205

Fig. 1. Labial Hymen.

„ 2. Diaphragm-like Hymen, aperture eccentric.

„ 3. Diaphragm-like Hymen, aperture central.

Fig 4. Semilunar Hymen.

„ 5. Lax Annular Hymen.

„ 6. Infundibuliform Hymen (acquired).

Plate II.—Uncoloured.

HYMEN AFTER DEFLORATION. . . . 206

Fig 1. Hymen vertically torn.

2. Hymen with 3 recent flaps.

„ 3. Hymen with 4 recent flaps.

Fig 4. Hymen torn some time ago.

„ 5. Rupture of Hymen and Fourchette.

Plate III.—Uncoloured.

MICROSCOPICAL CHARACTERS OF MENSTRUAL STAINS, VAGINAL DISCHARGES AND SEMINAL STAINS. . . . 207

FIG. 1.—MENSTRUAL STAINS.

A. Blood Corpuscles paler than natural.

B. Mucous Corpuscles.

C. Vaginal pavement Epithelium.

FIG 2.—VAGINAL DISCHARGE.

A. Globules of Mucopus.

B. Pavement Epithelium.

C. Nuclei of Epithelial Cells.

FIG 3.—SEMINAL STAINS.

A. Spermatozoa (entire).

B. Fragments of Spermatozoa.

C. Finely granular mucous globules.

D. Urethral Epithelial Cells.

E. Fatty Granules.

F. Crystals of the Ammonio-Magnesian Phosphate.

G. Transparent Drops of Spermatic Fluid.

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INTRODUCTION.

THE

ORIGIN & HISTORY OF VENEREAL DISEASES

From the Earliest Times to the Present Day.

THE ORIGIN OF VENEREAL DISEASES has probably given rise to greater difference of opinion than any other subject in the whole range of medical literature ; but, instead of swelling my work by numerous quotations from the treatises of those who have entered fully into the consideration of this subject, I shall, in the present introductory remarks, merely give my own opinions, referring those who may be anxious to obtain further information to the classic work of Astruc, and the modern treatise of Dr. Weatherhead.

A very superficial consideration of the laws which regulate the animal economy in a state of health or disease, as well as the various operations of these laws on the different structures of the human frame, is sufficient, I think, to warrant the pathologist of the present day in inferring, that many of the various affections, both organic and functional, now recognised as following sexual intercourse, and which I have here included under the collective term "Venereal Diseases,"* must have existed in all ages, and in every climate. In the present day we find that a large proportion of the complaints described in the first part of this work, and which we shall call NON-SPECIFIC† AFFECTIONS, MAY BE DEVELOPED SPONTANEOUSLY, and that we can produce many of them at will ; hence I conclude that it is more than probable that they existed long before they were described, because the same causes were then in action to produce the complaints as at present.

SYPHILIS DOES NOT ARISE SPONTANEOUSLY.—In respect to the *second order of venereal diseases, or specific affections*,‡ I can only now assert

* By the term venereal diseases, I mean all those affections which are, more or less, directly or indirectly, the consequence of sexual intercourse. They were first so called by T. M. Bethencourt, of Rouen, in 1527.

† By the term non-specific affections I mean diseases, the consequence of sexual intercourse, depending upon common causes, and not on any special one ; as, for example, gonorrhoea, &c.

‡ By this term are meant those affections which depend on a special principle, distinct from all the ordinary morbid causes, such as chancre or syphilis.

(and must refer for proof to pages 278 *et seq.*) that we have no evidence to prove that syphilis, properly so called, can arise spontaneously; all the experiments made to produce it *de novo* have completely failed; and a careful investigation of the disease shows, on the contrary, that it has been contracted from a person who has himself contracted it from another individual, and it is in this way *only* that the disease is now propagated.*

NON-SPECIFIC DISEASES MAY ARISE DE NOVO.—Cases every now and then occur which have a great tendency to shake the opinions of those whose faith is not founded on a comprehensive knowledge of the nature of ulcerations of the genital organs. I will cite one instance, which might be quoted as a strong corroboration of the belief that syphilis may arise *de novo* even in this the nineteenth century. During the month of January, 1849, a little girl was brought to Queen's Ward, St. Bartholomew's Hospital, under the care of Mr. Lawrence. The genital organs, buttocks, and thighs were covered with unhealthy-looking ulcers, varying in size from a split-pea to a sixpence; in some places distinct, in others confluent. No violence had been offered to her, nor was there any reason to suspect that she had been infected. She was pale, haggard, and had been subject to much privation; she was then in a filthy state, not even the commonest attention to cleanliness having been paid. To the unpractised eye this was a case of syphilis, originating in dirt and filth, differing in no respect from the disease as it appears in those unfortunate creatures who gain their livelihood in the streets; the ulcerations were as numerous, their aspect similar, and their character as defined, as in the ordinary cases of syphilis which we meet with in prostitutes. Mr. Lawrence ordered the child a warm-bath, applied a poultice to the affected parts, prescribed good food and quinine, and in a few days the sores became quite clean, the sloughs disappeared, and the ulcers changed into healthy-looking granulating sores, which no longer bore the slightest resemblance to any product of syphilis, and the little girl rapidly got well. A prostitute was brought into the hospital at the same time, with gonorrhœa and large ulcerations around the vagina. Here likewise the ulcers, depending only on a simple affection, after a few days of similar treatment presented the same clean, healthy surface, showing what discharge and filth will do.

* Mr. Coote, in his recent work on Syphilis, has attempted to refute this position. He has not furnished us with any data from which we can discover even a probable origin of specific diseases. Mr. Coote says, the conditions necessary to produce the venereal disease seem to be the same universally: namely, large assemblages of men with an inadequate proportion of females. He quotes information he has received, to the effect that the lower order of prostitutes admit seven or eight men a day.

Now M. Rossignol, in his *Aperçu* of the St. Lazare Hospital, at Paris, speaks of a young girl that came under his care who had had connexion forty-seven times in twenty-four hours. He found in her no specific disease, but considerable inflammation, which soon abated by rest, antiphlogistics, and low diet. If there ever was a case to produce specific disease from excessive copulation, surely this was one. I cannot therefore agree with Mr. Coote in thinking "that the poison is engendered by the mode of life to which prostitutes are exposed." I have moreover shown, in a paper read before the Medical and Chirurgical Society in 1859, that syphilis among prostitutes in Brussels is clearly unknown.

I would ask the reader to consider what might have happened if suspicion had attached itself to any man seen in company with the first of these patients? Syphilis, the disease might have been called as correctly as similar affections often have been designated, and supposing mercury instead of quinine had been used, we should then have seen one of those dreadful instances which too frequently occur, of error of diagnosis complicated with error of treatment—instances which are often advanced to prove the origin of syphilis in the present day.

EARLIEST NOTICES, AND ORIGIN OF SYPHILIS.—In common with many previous writers, I admit my ignorance as to when this specific disease, syphilis, began. It can be traced as far back as the year 1494, and on this point there is little difference of opinion.

DISEASE, WHEN FIRST DISCOVERED.—As to earlier times, authors are not agreed: for my own part, I believe that a disease* similar to syphilis was known previously to the year 1494; but the exact date of its outbreak is unknown, and we are ignorant what circumstances first produced it, or in what country it first made its appearance. In this respect there is the same lack of information as regards a vast number of other diseases, the origin of which we are equally unable at the present day to ascertain.

PROBABLE SOURCE, SOME ANIMAL POISON RECEIVED FROM THE HORSE.—In the Second Part of this work (page 279) I shall have occasion to refer to two or three cases tending to show, that animal poisons which have been introduced into the human system, probably from the horse, have a close analogy with syphilis. Van Helmont attributed syphilis to farcy transmitted from the horse to the human being, and his view of the question may not perhaps be so destitute of truth as some persons have imagined; for, in a recent conversation with M. Ricord, I found that he had likewise met with several cases that suggested the same idea.

Whatever may be the origin of syphilis, little doubt can exist that about the years 1493 and 1494, both the physicians and historians of the time described severe forms of venereal diseases, which they stated to be new and unknown, and which they admit themselves unable to cure. From this period to the present day we have progressed in our knowledge of these complaints; but it is only within a very few years that demonstrative proof, by means of inoculation, has enabled us to ar-

* Little doubt can exist that the leprosy so common formerly in Europe, and which has almost disappeared, consisted of what we now call secondary symptoms. I might mention many authors to support this assertion, but one perhaps will suffice. John of Gaddesden, who wrote in 1305, and who was a Fellow of Merton College, Oxford, thus alludes to the possibility of contracting the disease from leprosy women. "Ille qui concubuit cum muliere cum qua coivit leprosus puncturas intra carnem et corium sentit, et aliquando calefactiones in toto corpore."—"Rosa Anglica," Pavia, 1492. Car. 61.) A copy of this work may be seen in the Library of the College of Surgeons.

In Henry the Eighth's time there were six leprosy or lazaret-houses near London—at Knightsbridge, Hammersmith, Highgate, Kingsland, the Lock outside St. George's Gate, and at Mile End. Subsequently Lock Hospitals became the receptacles for syphilitic patients.

In 1452, Ralph Holland, merchant tailor, in a will registered in the Prerogative Court, bequeathed twenty shillings to the Lock Lazaret House. "Item lego leprosis de Lokes extra Barram Sti Georgii, 20s."—(*Weatherhead*, page 12.)

rive at an exact knowledge of what is and what is not primary syphilis, and of the means of distinguishing the specific from the non-specific affection.

EPIDEMIC OF THE FIFTEENTH CENTURY.—We have historical evidence that the earlier forms of the disease were very severe, from the descriptions given by those who witnessed its first outbreaks. Let me give the following extract from Fracastorius, who wrote in 1545 :—

“When it first broke out amongst us, it discovered itself by the following symptoms :—The patient was low-spirited, complained of weariness, and had a pale look ; at last, for the most part, little ulcers appeared about the pudenda, which were extremely obstinate, and after they were cured in one part, broke out afresh in another. Afterwards a kind of crusty pustules appeared upon the skin, beginning in some upon the scalp (which was most frequently the case) and upon other parts in others. At first they were only small, but increased by degrees in a short time to the size of the husk of an acorn, and a good deal the same appearance, not unlike those scabs which appear on the heads of boys. Of these scabs there were several different kinds, some of them small and dry, others large and moist ; some of a livid colour, some of a palish white, and some hard and reddish. All of them opened in a few days, and discharged a thick fetid matter ; nor can it be expressed what quantity of that matter perpetually discharged, or how nasty in its quality. Afterwards the ulcerated parts became eroded, in the same manner as those ulcers which are called Phagædenic, and sometimes they infected not only the flesh, but likewise the very bones. When it attacked the head chiefly, it produced acrid rheums, which eroded sometimes the palate, sometimes the uvula, sometimes the jaws and tonsils ; in some it destroyed the lips, in others the nose, in others the eyes, and in others the whole pudenda. Besides this in a great many the limbs were greatly deformed with gummy tumours, which frequently grew to the size of an egg, or a small loaf ; and being laid open, discharged a white mucilaginous matter. That tough hardness appeared chiefly in the arms and legs, and sometimes became ulcerated, sometimes it continued entire till death. But besides all the above-mentioned symptoms, as if they were only trifling, there happened violent pains in the arms, frequently together with the pustules, sometimes before, sometimes after, very obstinate and lasting, and excessively tormenting. They were most violent in the night and the pain was not properly in the joints, but in the muscles and nerves. However, there were pustules sometimes without pains, and in some pains without pustules ; but the greater part was afflicted with both. In the meantime all the limbs became feeble, and the body emaciated, the appetite quite lost ; the patient had no sleep, but was either melancholy, or very passionate, with a strong inclination to lying in bed. His face and legs swelled ; sometimes, though rarely, the disease was attended with a slight fever ; some had a pain in the head, which was lasting, and not to be subdued by any medicines.”—Lib. 2 *de Morbis Contagiosis*, cap. ii. *de Morbo Gallico*.

Even now (1860) cases may be met with vying in intensity with the epidemic of the fifteenth century. • The only difference being, that

what was apparently the rule in those days, is the exception now (*v. post* pp. 317—324).

All that we now know of the complaints shows that were the hygienic circumstances that existed in former times to arise in the present day, the disease would be as severe as ever. Indeed, this has happened more than once. Syphilis broke out with almost mediæval intensity among the English troops in Portugal, and also among the French soldiers during their occupation of Rome. (See author's treatise on Prostitution, page 44.)

FREQUENCY OF THE DISEASE, ACCORDING TO THE EARLY WRITERS.—Writers of the day, who alluded to the frequency of the disease, as I have already stated, rarely mention the proportion of cases. Grunpeck, a German physician, who wrote in 1496, however tells us that the magnates of the land, kings, princes, bishops, and the noblesse, all laboured under the malady. Marco Antonio Sabellico,* a Spanish historian at the period, 1506, says that almost every twentieth person was affected. I see nothing in the numbers or rank of the persons attacked three hundred years ago which differs much from what is the case in the present day. In fact, even if the disease is not so rife among the upper classes as formerly, it still exists among the lower classes in our large cities in a much larger proportion than one in twenty, and I see no improvement here, or that we are much freer from the disease than our ancestors, who lived three centuries ago.†

* Vigesima fere pars hominum id malum experta. Paracelsus says it spared none, "nulli parcens," which Barrough repeats, adding, "be they kings, lords, or ladies." Again,

Car regne a ce trez cruel tourment,
Par tout le monde universallment.

"Joan de Maire," 1525.

† I extract the following statistics from a paper I lately (1860) read before the Royal Medical and Chirurgical Society, entitled, "*On the rarity and mildness of Syphilis among the Belgian troops quartered at Brussels, as compared with its prevalence and severity among the Foot Guards in London.*"

Venereal affections in the three regiments of Foot Guards during twelve months, from April 1, 1858, to March 31, 1859.

Strength.	Scots Fusiliers, 1600.	Coldstream, 1600.	Grenadiers, 400.	Total, 5600.	Total in Groups.	Average.
<i>Non Specific.</i>						
Gonorrhœa	118	176	169	463	} 519	1 in 10
Hernia Humoralis	26	17	52	95		
Bubo	64	59	77	200		
Phymosis et Paraphymosis .	1			1		
<i>Primary Symptoms</i>						
Syphilis Primitiva	104	540	558	1200	} 1867	1 in 4
Ulcus Penis non Syphiliticum	116	19	32	167		
<i>Secondary Symptoms.</i>						
Syphilis Consecutiva	36	64	68	168	168	1 in 8
Total Venereal treated . . .	465	875	954	2294		
Total sick treated.	1224	1762	2272	5258		

I shall, however, doubtless be met by the reply, that even if venereal disease is as common as formerly, its severity has decreased, until it has become so mild as to possess nothing like its former virulence. We should be in error in supposing that the disease was originally in itself a very violent affection. The perusal of ancient authors in no way induces me to believe that syphilis ever differed from what we meet with in the present day. Nicholas Poll (1536) states that the natives of St. Domingo cured themselves of the disease by guaiacum in about ten days, although the Spaniards required from fifteen to sixty days ; and St. Domingo is the source from which the disease is by some supposed to have sprung. Oviedo states the same fact. Leo Africanus tells us that he had seen many get well in Numidia without either physic or physician, merely by the salubrity of the air.*

In reading the books published on syphilis, which describe the frightful ravages the disease is said to have committed in the latter part of the fifteenth century, we must take into consideration many circumstances. In the first place, it was supposed to be a new complaint, and as such, we are told, was abandoned by physicians, who acknowledged that they did not know how to cure it,† and its treatment was therefore left in the hands of quacks. All authors, particularly those non-medical men (many of whom wrote on syphilis), are very apt to exaggerate a new disease, and we have every reason to believe that this was the result as regards venereal disease.

If the epidemic of the fifteenth century be taken as the type, and a comparison made with the disease as we meet with it in the present day, then indeed the affection has become much milder. But this is not the proper view of the case ; syphilis, which I believe existed long antecedent to that period, became aggravated by the same causes exactly which are known to increase its virulence in the year 1860. Send a body of men into a foreign country, as we did in the late Peninsular war, expose them to vicissitudes of climate, and after long marches and short commons, let them indulge in wine and promiscuous intercourse, remain inattentive to cleanliness, and as surely as syphilis exists, so will it become aggravated, and assume a form as virulent as it did in 1493, and we shall again hear of the Black Lion of Portugal.‡

My own opinion is that syphilis in itself has not become milder. Public health is more studied, and the treatment of the complaint better understood, and patients apply earlier, but the germ of the disease lurks amongst us, and in as concentrated a form as ever. Many authors, even those who have written on the complaint immediately after the supposed origin of the disease, have prophesied its subsidence and ultimate disappearance ; but we are apparently as far

* See authors quoted by Dr. Weatherhead, page 72 *et seq.*, in "History of Venereal Diseases."

† "Literatos ab hac curâ fugisse in hoc morbo se nihil scire confitendo."—(*Jasper Torella*, 1497.)

‡ A form of syphilis so called by the troops, because the virile member became inflamed a few hours after connexion, and then turning black, dropped off in the poultice, leaving a mere stump. Such cases are every now and then witnessed in our metropolitan hospitals even at the present day, and are found described at page 312 of this work, but their occurrence is less frequent than formerly.

from the fulfilment of the prophecy as ever. So early as the year 1518, Pietro Mainardi mentions the fact of the complaint having become so mild that he predicted its total extinction. In the year following, Ulric von Hütten says it could scarcely be regarded as the same disease. (C. 1.) In 1550 the disease had become so mild that it seldom proved fatal. (*Vidus Vidius Lec. Curat. Morb. Gen.* p. ii. sec. 2.) Sydenham says, "*Europæo nostro non perinde lætatur, sed languet indies, et mitioribus phænominis fatiscit.*" (Page 309.)

I trust, then, I have stated sufficient authority for my belief that syphilis was not originally the formidable disease some would lead us to suppose, but, on the contrary, that, from the earliest records we possess, we may rationally suppose the complaint to have been little more severe than it is in this country at present, and indeed in no respect different, except that secondary symptoms followed the primary ones in a shorter time than they do at present, and that pustular eruptions took place more frequently. These variations probably depend upon climate and constitution, which every now and then exert a similar influence.*

INFECTIOUSNESS OF THE DISEASE ACCORDING TO THE EARLY WRITERS.—I should leave this Introduction imperfect if I did not give a slight sketch of the theories entertained on the means of transmission of venereal diseases; for, in proportion as one or the other has been entertained, so has the disease been well or ill treated, and so has society suffered by the extension or diminution of the complaint; and we in the nineteenth century may gain much practical information by noticing the faults of our predecessors. As long as the public mind was convinced that syphilis could be contracted by inhaling the same air as that breathed by the already infected, syphilitic patients were avoided by the community in the same way as those suffering from the plague, or more recently, such as laboured under cholera. That this fear of infection existed, we learn from many passages which are to be found in the old writers.† We may quote the instance of Grunpeck being forsaken by his friends, who, we are told, recognised the disease "by the change in his complexion." The lower orders were driven into the woods and fields, and left to perish without solace and assistance, even by medical men.‡

This neglect of patients could only tend to increase the virulence of the complaint, the treatment of which was thus taken up by quacks and itinerant vendors of specifics. Under such circumstances, the true cause of the disease or its proper remedies were not likely to be studied.

Occasionally, the supposed possibility of infection by the breath was seized upon (just as magic was) to make charges against persons who were obnoxious; thus,

* As in Rome, during its occupation by the French troops in 1850. See author's work on Prostitution, p. 44.

† *Sevitas hujus passionis et detestatio ejus maxima, ita ut homines à civili conversatione separentur, saltem quoad curati sint.*—("Widman: Tract. de Pustulis," &c.)

‡ "*Pauperes hoc malo laborantes expellebantur ab hominum conversatione, tanquam purulentum cadaver derelicti à medicis (qui se nolebant intromittere in curam) habitabant in arvis et silvis.*"—("Laur. Phrisius: De Morb. Gall." c.1.)

One of the articles of accusation brought against Wolsey in 1539 was, "that knowing himself to have the foul contagious disease, &c., he came daily to your highness, rowning in your ear and blowing upon your most noble grace with his perilous and infectious breath."* It is curious at the present time to find these opinions, long given up by scientific men, still in firm possession of the lower classes. Among them, and particularly in country places, where the complaint is known only by the name of the foul disease, the man is shunned by those aware of its existence, in the full belief that his breath is infectious; a common labourer would never dare to drink out of the same vessel with an infected person; secrecy is still, therefore, maintained among this class when affected by venereal diseases more than among any other, and the quacks of the day, both in Paris and London, have always styled these complaints secret diseases. The result has been, that patients suffering under venereal diseases have concealed their complaints, not liking to apply for medical advice, or only doing so when the disease has made great progress.

We find, however, many authors, even in those days, denying the contagiousness of the complaint through the medium of the air, but little attention was paid to their observations. Public opinion, and the fact that popes, nobles, and princes contracted the disease, rendered it much easier to give currency to the belief that the complaint was contracted through the air, than as a consequence of the licentiousness of the day. ("Weatherhead on Syphilis," p. 61, *et seq.*)

We even find medical writers of that age relating their own cases without scruple, or stating those of their patients. Grunpeck was an ecclesiastic; Ulric von Hütten was a knight, and one of the most zealous champions of the Reformation.

In proportion as the venereal disease extended, owing to the causes above mentioned, its true source, namely, contagion, became known, and we find that patients labouring under the disease were shunned, and obliged to leave large towns. In 1497, James IV. of Scotland, in consequence of the frightful prevalence of the venereal disease in Edinburgh, issued the celebrated proclamation banishing the infected from the city. The original is preserved in the Records of the Town Council, dated 22nd September, 1497; and as a document, both little known and curious in itself, as characteristic of the age, deserves especial notice. His Majesty "charges straitly all manner of personis being within the freedom of this burt, quikls are infectit, or hes been

* Oviedo says, that it was communicable by the breath: "Y participar de su aliento."—"Hyst. Gen." lib. x., c. 2, fol. 93.)

As one cause of infection, Nicholas Massa mentions, "*ær per os inspiratus*." Benedictus Faventinus entertained the same belief; but the case which he cites in exemplification was evidently caught by kissing an infected female. To prevent catching the disease by the breath, medical men, in early times, put bread, or a sponge, soaked with vinegar, in their mouth when they spoke to their patients—a precaution we now know to be wholly unnecessary.—(*Weatherhead*, page 36.)

The supposed disinfecting power of aromatic herbs and plants lingers yet amongst us. At St. Bartholomew's Hospital fresh marjoram and rosemary are strewed on the table before the governors who admit the out-patients; and I believe at the Central Criminal Court the same old custom of placing these supposed disinfectants on the judge's table still exists.

infectit, uncurit with this said contagious plage, callit the Grandgor,* devoyd, red, and pass furt of this town, and compeir upon the sandis of Leith at ten hours before none; and thair sall thai have and find botis reddie in the having ordanit to them by the officeris of this burt, reddy furneist with victuals, to have thame to the Luche,† and thair to remane quhill God provyd for thair health." Those evading this ordinance "*salle he brynt on the cheik with the marking irne, that thai may be kennit in tym to cum.*"

I may likewise cite in this place the more generally known "Arreste" of the Parliament of Paris, in reference to the venereal, dated the 6th of March, 1496, stating that, "Because in this city of Paris many persons were sick of a certain disease called the Great Pocks, which had raged *for the last two years* in this kingdom, as well in Paris as in other parts of France:" and as there was reason to apprehend that it would increase as the spring advanced, it was advised to provide accordingly. In order, therefore, to put a stop to the inconveniences daily occurring from the visiting and communication taking place with the sick, it was counselled, determined, and decreed by the Reverend Father in God Monsieur the Bishop of Paris, the officers of the crown, and the mayor and sheriffs of Paris, as follows:—

1. That the public town-crier should announce, on the part of the king, to all strangers, whether men or women, having this disease, and not dwelling or resident in this city of Paris, that, within twenty-four hours of this notice, they depart the said city to the country or places of which they are natives, or to where they abode when taken with the distemper, or elsewhere they like, on pain of being hanged: and to facilitate their departure, they are told that at the "portes," St. Denis and St. Jacques, they would find persons properly deputed to give them four Parisian sous each. They were, moreover, forbidden to re-enter the city until perfectly cured of the disease.

By the 2nd article it was ordained, "That every citizen having the distemper, was to confine himself to the house, under the same penalty."

By the 8th, the mayor gave orders to the examiners and serjeants not to suffer any communication between the sick and the inhabitants, and those found disobeying this interdiction were to be expelled the city or sent to gaol.

And by the 9th, the city gates were to be guarded that none might stealthily re-enter.—(*Weatherhead*, p. 55.)

As may be supposed, these regulations could not be carried out, and a few years later we find the hospitals crowded with patients. The authorities then ordered that the medical men should cure such patients

* Among the common people in France the disease was called "La Gorre."

"Mais le commun quand il la encontra,
La nommoit Gorre, ou la Verolle grosse,
Qui n'espargnoit ne couronne, ne crosse."

"*Les Trois Comptes, par Maître Jean le Maire.*" 1525.

† The island of Inch Keith, in the Frith of Forth, about twelve miles distant from Edinburgh.

as suffered from venereal diseases, providing always that the patients should afterwards be whipped and sent about their business.

I have, in my recent work on "Prostitution,"* fully dwelt on the present condition of syphilitic patients in London, and the causes which produce the high average of venereal disease in our Metropolis, as compared with other capitals. I have also discussed the possible remedies for this state of things which seriously affects a large part of our population, and especially impairs the efficiency of our army and navy. I do not therefore think it needful to enter into the subject here, but would refer those interested in it to that work.

* Prostitution considered in its Moral, Social, and Sanitary Aspects in London and other large Cities, with Proposals for the Mitigation and Prevention of its attendant Evils. By W. Acton. Page 33 et seq.

A

COMPLETE PRACTICAL TREATISE,

ETC. ETC.

PART I.

NON-SPECIFIC DISEASES.

PART I.

NON-SPECIFIC DISEASES.

VENEREAL diseases * may be classed under two great divisions, SPECIFIC and NON-SPECIFIC affections. In this, the first part of my work, I shall treat of NON-SPECIFIC diseases, a class of affections called by M. Ricord SYPHILOID; but, as that term may be misunderstood by English readers, I shall not make use of it, but at once proceed to describe non-specific, or non-virulent diseases.

Definition.—By the term *non-virulent, non-specific* diseases are meant those affections which follow sexual intercourse, reproducing themselves, often contagious, but not depending upon a special cause—non-inoculable.

Under this definition is included *blennorrhagia*, and its consequences; *excoriations, herpes, eczema*, and every other affection the result of sexual intercourse, not included under the second order, or *specific affections*.

CHAPTER I.

· BLENNORRHAGIA.

BLENNORRHAGIA, from *Βλεννος*, mucus, and *ῥέω*, to flow, signifies a discharge from mucous membranes, consisting principally of mucus, and depending upon inflammation of those membranes, being to the urethra, vagina, or conjunctiva, what bronchitis is to the bronchi. The only difference, indeed, consists in the exciting cause, blennorrhagia being most frequently contracted in sexual intercourse.

I have chosen this term, as having the widest and most general signification. But as blennorrhagia means merely inflammation of mucous membrane, caused by sexual intercourse, and attended with discharge, if we want to specify what particular part of the membrane is inflamed or secretes mucus, we must add the adjective urethral, vaginal, uterine, &c. For the different kinds of blennorrhagia there are different synonymes according to the parts of the mucous membrane it attacks. Thus urethral blennorrhagia is more commonly known as gonorrhœa. Vaginal blennorrhagia as vaginitis, uterine blennorrhagia as leucorrhœa, præputial blennorrhagia as

* By this term I mean all those affections which are, directly or indirectly, the consequence of sexual intercourse.

balanitis, &c. Generally, however, blennorrhagia may be defined to be inflammation of mucous membrane, attended with more or less discharge, and a consequence, more or less direct, of sexual intercourse ; —not necessarily, although often, contagious. The contagion depends upon the nature of the morbid secretion, which, acting on another mucous membrane, will occasion a blennorrhagia, but is incapable of (on inoculation) producing disease of the cellular tissue into which it is introduced. In fine, blennorrhagia differs in no respect from other inflammations of mucous membranes, otherwise than in its usual situation, and in the manner in which it is contracted. Blennorrhagia thus considered may occur in nearly all the mucous membranes. In the male, the urethra or prepuce may become diseased ; in the female, the vagina, uterus, &c. ; and in both sexes the conjunctiva and rectum. The affection, as far as my personal observation has gone, does not attack either the buccal or nasal mucous membrane.

CHARACTERS OF THE DISCHARGE.

We must not, however, suppose that these discharges consist wholly of mucus. Modern investigations show that pus enters largely into their composition, particularly in cases where violent inflammation is present.

I have submitted a great number of specimens of discharges of blennorrhagia in its different stages, as well as of the urine of patients labouring under the disease, to my friend Dr. J. W. Griffith, who has kindly favoured me with the following results, which are the more valuable, as the subject has not, I think, been treated in any other work, nor has the microscope been previously brought to bear on this part of pathology :—

“The secretion of the mucous membrane affected with gonorrhœa consists of muco-pus, but it varies somewhat in character according to the period of duration of the morbid action. In the very earliest stage it consists of a simple white watery mucous fluid, but in a very short time it becomes yellow. In some cases the discharge is milky white, or nearly so, and retains this character throughout the duration of the disease. In these the corpuscles are of that kind which has been denominated “mucous,” exhibiting the molecular motion, &c. This condition in an unchecked gonorrhœa lasts for some time ; ultimately it loses some of the yellow tint, becoming more watery, and remains as gleet. During the very earliest period it consists of simple mucus, and under the microscope exhibits epithelial scales and their debris. During the second stage it also contains these substances, but, in addition, albumen in solution, which is coagulable by heat, the precipitate not being dissolved by acetic acid ; and the microscope detects very numerous pus-corpuscles, upon the presence of which the yellow colour is dependent, together with epithelial scales. In the latter and chronic stages, the number of pus-corpuscles is proportionably diminished, that of the epithelial scales increased, and the albuminous impregnation is diminished or disappears.

“The urine (excluding the gonorrhœal deposit) in gonorrhœa does not differ essentially from its normal state ; it is, however, usually of

lower specific gravity, and very commonly contains small crystals of oxalate of lime. The pus-corpuscles increase the density of the deposit, which subsides by repose, so that the latter appears to the eye to contain a more copious and dense deposit than in health. The pus-corpuscles are also somewhat different in appearance from those of normal pus, being rather larger, less granular, more transparent, and less rapidly acted upon by acetic acid; in some the molecular motion is seen, in others not; the former properties depend upon the imbibition of the urine, the latter upon their being surrounded by the mucus, which defends them for a time from the action of the acid. They ultimately yield the same nuclei as normal pus. The urine in gonorrhœa also contains slightly more pavement epithelium from the bladder than the natural fluid; but I have not been able to detect the cylinder epithelium from the urethra to any amount. However, the presence of the pus-corpuscles without excess of the vesical or renal epithelium might guide in the diagnosis of the source of the pus."

The epithelium alone may be the seat of the affection, or the substance of the mucous membrane may participate in it; lastly, the follicles may become affected, or the sub-mucous cellular tissue be simultaneously or consecutively attacked. (See Plate III., Figs. 1 and 2.)

SYNONYMOUS TERMS.

Although the term blennorrhagia means simply the flow of mucus, still when used medically, it is not intended to express that the discharge, which is a consequence of the disease, consists only of mucus; it is rather a muco-purulent secretion, as any one may readily satisfy himself. And the use of this term does not imply that the disease depends upon anything specific, or different from common inflammation; for, after a close study of uncomplicated cases we can find no reason for agreeing with those authors, who seem disposed to admit a blennorrhagic virus, or, in other words, to distinguish gonorrhœa from leucorrhœa.

The disease here spoken of, under the term blennorrhagia, has been successively known by a variety of names. Among others, authors have employed the term

Gonorrhœa, derived from *Γονος*, semen, and *ῥεω*, fluo, it being supposed that the chief symptom of the disease was a discharge of semen. The impropriety of employing the term gonorrhœa as a generic term, at the present day, is evident; it is objectionable, since the discharge does not contain semen; and it is by no means applicable as a general description of affections of mucous membranes. For instance, were the disease commonly known as fluor albus, or the whites, (a discharge which is the result of inflammation) to be described as gonorrhœa of the uterus, a very erroneous idea of the complaint would be created. By choosing another name, the minds of practitioners may be weaned from the idea that gonorrhœa, as they call it, is always the consequence of contagion, although they are unable to distinguish it, except by the cause. I, however, by no means wish entirely to reject the term, and shall reserve it for the well-known

discharge from the male urethra, in deference to the long recognised use of the word. The time is not yet come when a surgeon may tell his patient that it is not gonorrhœa, but blennorrhagia, he is suffering from ; however, such a term may one of these days be a popular one ; for I already find practitioners becoming convinced that there are a great many discharges from the male urethra, for which blennorrhagia would be a far more accurate term than gonorrhœa.

I make these observations to obviate objections to the terms I employ. However, if author and reader can agree upon the meaning of terms, the object in view will be attained.

Chaude pisse is the term employed usually in France in non-medical language, derived from *chaude*, hot ; and *pisser*, to urinate : but though graphically describing one of the symptoms very frequently present, still it is objectionable, as many patients, particularly females, do not complain of scalding in making water, especially when the affection is confined to the upper part of the vagina.

Puorrhœa is the name given by a French writer to the disease which we are describing : he wishes to imply, that the affection gives rise to, or is accompanied by, a discharge of pus. Now, although it happens that pus is mixed with the discharge, still it alone does not constitute the affection, for I have already stated it to consist of mucus and pus, and the quantity of the latter secretion will vary greatly. The inconvenience, therefore, of using such a term will be at once apparent.

Arsura is another term that old writers employed to designate this disease, as they supposed it to be a species of purgation to man, and replaced menstruation in the female, which in their opinion was the outlet of bad humours.

Clap.—This term, now commonly employed in England, is derived from the French term *CLAPIER*, meaning a dépôt of matter, or anything that is filthy. The impropriety of using such a term in a scientific work need not be dwelt upon.

Mucite.—The physiological school in France applies this term to blennorrhagia, implying a simple inflammation of the mucous membrane. In the absence of the more appropriate term, blennorrhagia, the equivalent term, *mucitis*, might be used, but its introduction now would answer no good end.

Catarrhal inflammation is another term by which this disease has been known, and Capuron has spoken of it as a *venereal catarrh*, not implying, by that term, that it depends upon a principle distinct from inflammation, but wishing to use the term *venereal* as implying that a disease is a consequence of sexual intercourse. And really the term is not a bad one ; it may be introduced with advantage in speaking of affections of the bladder. There is, however, one very important objection to its use—viz., that by the word *catarrhal*, we describe affections which are the results of cold, and change of temperature. Now the majority of blennorrhagic affections do not depend upon any such cause ; although it occasionally exists, and frequently complicates those which arise from contagion. A multiplicity of terms is, however, so objectionable, that I shall not further dwell on this one, but only add that most scientific persons would clearly under-

stand any one describing a disease under the term catarrhal inflammation of the uterus, urethra, &c.

Catarrhal Primary Syphilis.—In the valuable work on the Venereal Disease, by the late Mr. Wallace, I find blennorrhagia described under this term. Notwithstanding such an authority, I think no word could be more improper, as it suggests that gonorrhœa and syphilis arise from one and the same virus.

Brenning is the last term of which I shall speak ; and it is here mentioned, more to complete the history of the synonymous terms, than with the intention of recommending it as a general one, to describe the disease in question, arising as it does from so many causes.

CAUSES OF BLENNORRHAGIA.

The causes of blennorrhagia, considered in reference to mucous membranes generally, may be divided into two classes, the *predisposing* and *exciting*.

Predisposing Causes.—Under the head of predisposing causes,

Age may be cited as an important feature. Infants are found to be more predisposed to the affection than adults, *ceteris paribus* ; and this predisposition seems to depend upon the irritable state of their mucous membranes. Every one acquainted with the diseases of newborn children, must be aware that they are particularly liable to blennorrhagic affections of the eyes, glans, prepuce, and vagina, from causes that would fail to give rise to the complaint in adults.

Sex has likewise its influence as a predisposing cause ; it is an indisputable fact, that discharges of a blennorrhagic character are much more frequently found arising in the female from other causes beside contagion, than in the male. Contagion, indeed, is the common cause in the man ; whereas the disease frequently arises in perfectly virtuous females from other causes. These we shall hereafter have to describe. It does not, indeed, necessarily follow that a female who is labouring under this disease should, although she has been exposed to contagion, have contracted the ailment thereby. For the mucous membrane of the female is so generally coated with a mucous secretion, that she may expose herself to contagion, and yet escape contamination, in consequence of the mucous secretion sheathing the epithelium lying beneath it. I have seen several such cases, and in medico-legal questions the possibility of this occurring is a consideration of great importance.

The *Temperament* plays its part, likewise, as a predisposing cause. Every individual who is subject to congestion, or an œdematous state of the mucous membranes, is predisposed to blennorrhagia ; hence the lymphatic temperament is a strong predisposing cause. We meet with blennorrhagia much more frequently in the fair-haired woman than in the brunette. But we observe a particular type of irritable, dark, clear-complexioned man, in whom the disease is as difficult of cure as in the fair-haired.

It is difficult to say if one attack of blennorrhagia predisposes to a second. But if an individual has been once subject to the complaint, connexion with a female labouring under slight symptoms of leucorrhœa will often reproduce the disease, and yet the ailment in the

female may be so slight that it will fail in inducing disease in other men who are not thus susceptible, and who have not been subject to blennorrhagia. Numerous instances will be given in the course of the work, and others are daily met with in practice, proving this susceptibility. The subject is further treated of under the head of Contagion.

Climate and *Locality* are two other very potent causes in inducing blennorrhagic affections, as they often are combined with or even induce the lymphatic temperament. If statistics could be collected on such a subject, I feel confident that discharges from mucous membranes would be found much more common in England than in France, or in more southern climates. The frequency and obstinacy of discharges from the male in this country are proverbial.

In low lying situations and in damp weather the disease is most rife and more difficult of cure. The same remedies which succeed in dry weather, will often fail in damp moist months. The season of the year is not without its influence. In spring and autumn, discharges from mucous membranes are more common than in summer or winter.

Hygiene is daily found to be concerned, more or less, in this matter. Under this general term mention should be made of the influence of *clothing*. Light and imperfect clothing may be considered as one of those causes which predispose females in the higher ranks of life to discharges of a blennorrhagic nature. Women will too often sacrifice comfort to appearance; hence the *mignon* shoe and the open-worked stocking are worn, in spite of the cold feet they produce: a chilliness of the extremities follows the insufficient quantity of woollen undergarments, and gives rise to what are called white discharges. The peasant girl, who protects herself from the cold by woollen petticoats and worsted stockings is not so subject to leucorrhœa, and we may draw the practical lesson of strongly recommending warm underclothing in cases of blennorrhagic affections.

Exciting Causes.—Under this head may be placed the following causes:—

Food of a stimulating, heating nature, as well as salt provisions, are so many exciting causes; beer, of all beverages, has been more especially accused of this effect, but on insufficient grounds; it is, however, certain, that of all beverages it is the one which will the soonest bring back a discharge when taken during convalescence. In Germany the students who drink beer, though of a weak kind, to great excess, know this so well, that they avoid it most particularly when labouring under urethral blennorrhagia; and I have had occasion to see cases where the discharge has been recalled by even one glass of that liquid. They consider their red wine as of the greatest benefit, and find that a bottle of the strongest Rudesheimer does not so much harm as one glass of beer. In præputial blennorrhagic affections, as well as in uterine, these beverages may, I believe, be taken with impunity, showing that the urine charged with the extractive matter of beer and wine produces some peculiar local effects.

Among other articles of food, asparagus has a tendency to produce urethral blennorrhagia; hence its use should always be forbidden to

patients liable to the affection in question. There are, in fact, certain persons who cannot eat that vegetable without having more or less of an urethral discharge on the following morning.

The use of cantharides is said to be followed in some persons by the same effect.

It has been stated that horse-exercise will produce, in the female, this affection. Frequent and long-continued sexual indulgence, and continence, following after excesses, are likewise said to act as exciting causes. I believe the last may, when predisposition exists. Still, as the diseases of women become better known, less stress is laid on these exceptional causes, as will be seen when we come to treat of uterine affections.

M. Jourdan thinks that onanism is one of the most common causes. M. Ricord, however, entertains a different opinion. Although I do not suppose that masturbation is necessarily succeeded by blennorrhagia, I imagine it to be a strongly exciting cause. The following case shows that there exists some reason for this opinion. During the period I performed the duties of Externe, under Professor Velpeau, at La Charité, a mother brought into the hospital a little girl of three years of age, affected with a white swelling and a discharge from the vagina. She stated that the infant was in the constant habit *de s'amuser*, as she called it, and when left alone, repeated continually the mal-practice; she further traced the habit, so early commenced, to a vile plan practised by nurses in France of tickling the genital organs of children who are peevish; this, for the moment, quiets them; but infants repeat these manipulations even at a very early age, as this case proves. On inquiry I found that this was not an isolated case of this practice, which, as may be supposed, leads in after life to most vicious propensities.

Local irritation, or mechanical causes,* such as bougies, pessaries, calculi, or any substance that individuals introduce into the vagina, rectum, or urethra, will act as causes of the disease. M. Ricord used to relate the case of a woman who was brought into the wards of Dupuytren, complaining of great pain and discharge in the vagina; on examination by the *toucher*, that eminent surgeon was not a little astonished at finding his finger opposed on all sides by a wall of porcelain. After sundry efforts, a large jam-pot was pulled out, which she had introduced so far as to be incapable of withdrawing it.

Enemata have been accused of causing blennorrhagia, probably on insufficient evidence, but this use of hot water may recal a discharge when it is getting well.

Injections.—It may seem paradoxical to state that injections will produce blennorrhagia, and that these means, which, as we shall presently see, are undoubtedly the most efficient in curing the complaint, should occasionally produce the disease in peculiar constitutions. The

* Hunter says, p. 469, Palmer's Edition: "for instance, every symptom of the venereal disease in form of a gonorrhœa may be produced by any other visible irritating cause, and often without any cause that can be assigned; even buboes and swelled testicles, which are symptoms of this disease, have followed both stimulating injections and bougies when applied to the urethra of a sound person."

first case which induced me to entertain this opinion, occurred to a gentleman who consulted me on the morning following sexual intercourse; he stated that immediately after coition, fear of consequences induced him to procure an injection of two grains of sulphate of zinc to the ounce of water, and he injected one syringe full into the urethra; he was surprised at this being followed by slight pain, with scalding; and in great alarm he came to me on the following morning with a yellow discharge, the pain and heat in making water being confined to the fossa navicularis. I was at first inclined to treat the case as one of gonorrhœa, but remembering that on a previous occasion he had been unable to bear weak injections, and that little sloughs had been formed about the glans penis by the employment of a very weak solution of zinc, I began to doubt whether the injection might not have caused the discharge: the result proved that it was so. I persuaded him to discontinue the injection, and remain quiet till the following day; he did so, and the discharge disappeared. In fact, in some persons the best treatment of gonorrhœa is to leave off all injections, as the too long continuance of these usually valuable remedies produces or keeps up the discharge, as will be stated hereafter.

Let those who have any doubt on this statement consult the work of Swediaur, page 32, vol. i. That author states that he injected a solution of ammonia into his own urethra, and a most violent inflammation, with purulent discharge from the whole canal,—which it required six weeks to cure,—came on, and fully convinced him that injections of an irritating nature will produce the most violent forms of blennorrhagia.

There are certain pathological or morbid states of the constitution which occasion the disease in question. Thus scrofula, gout, cancerous affections, various skin diseases, secondary symptoms, particularly the *mucons tubercle*, have undoubtedly this effect.* I have now under my care a medical man who has psoriasis of the corners of the mouth, and tongue, with a similar condition of the urethra, as far as it can be seen, attended with discharge, which the ordinary remedies have failed in curing. His family are all subject to psoriasis.

Labour and Abortion may be considered as very frequent causes of blennorrhagia; the lochia, instead of disappearing after the usual time, become irritating, and give rise to chronic discharges. But one of the most frequent causes of the complaint in women is undoubtedly abortion. If you interrogate those suffering from discharges, it will be found that they date, truly enough, the commencement of their

* A good illustration of this happened in one of the patients at the venereal hospital in Paris, during the winter of 1840. A man came in suffering under various secondary symptoms, particularly the mucous tubercle (*condyloma*) around the anus; he drew my attention to a discharge which proceeded from the umbilicus: on examination a mucous tubercle was distinctly recognised in this position, and M. Ricord took the opportunity of showing it to his class; no doubt, many of them will remember well the case. Now here was the secretion from the tubercle giving rise to a blennorrhagic discharge; had such a case occurred in the vagina, most persons would have considered that the gonorrhœal or leucorrhœal discharge, as it would there be called, gave rise to secondary symptoms, whereas the converse is true. Moreover, as mercury is of the greatest advantage in curing secondary symptoms, and was here employed with advantage, such treatment might have been cited as a further proof that gonorrhœa and syphilis are one and the same affection.

ailments from the time of their first miscarriage. It is at this period that the disease commences, which continues year after year, intractable to every drug in the pharmacopœia, and unchecked by lotions, causing the poor patient to drag on a miserable existence, and giving to the hitherto pretty woman that characteristic appearance which may be called uterine.

Inattention to Cleanliness.—There is no one cause, perhaps, which gives rise to blennorrhagia so frequently as inattention to cleanliness. Washing the external organs of generation does not suffice. It is necessary that the secretion which comes from the upper part of the vagina and uterus should be removed daily. And this is best done by vaginal injections. This precaution is more necessary in some females than in others, just as it is found that some boys should draw back the foreskin and wash away the secretion which lodges there oftener than others, as the glands secrete the smegma more abundantly in some constitutions or in those having long prepuces, than in others. It has been supposed that modest women do not require this strict attention to cleanliness. This is an error. It is likewise a mistake to suppose that prostitutes are the only class that neglect this necessary ablution. The frequent use of warm water tends materially to prevent those discharges met with in married women as well as in dissolute unmarried females. Surgeons who are consulted on uterine affections, and on venereal diseases, have reason to know that the women of the town are particularly careful, and employ internal ablution carefully and frequently. It would be the height of prudery for a medical man, whose object it is to enlighten his professional brethren on uterine disease, to conceal, from motives of false delicacy, facts which are too apparent, and which can be verified by those who have the means or opportunities of doing so. I might here mention many cases; one will suffice. An old patient of mine married, and shortly before his wife's confinement came to me with gonorrhœa præputialis. He assured me that since his marriage he had led a most exemplary life. On examination of the lady (and she moved in the highest circles) I found an acrid discharge, more than enough to account for her husband's condition, and which was completely removed by tepid water, which she had been afraid of using. Surely, accoucheurs would do well to give their patients a few hints on the necessity of ablution, even up to the period of their confinement. And this might be done without in any respect wounding the feelings of the pregnant females. But in both sexes, hygienic regulations appertaining to the sexual organs have not been sufficiently inculcated, from a false delicacy, the results of which we are daily witnessing.

Menstruation has its influence in producing the affection in question. Of this fact no people were more aware than the Jews. We find it strictly forbidden in the Mosaic law to have connexion with a woman about this period, and the command, no doubt, arose out of the fact that such intercourse, particularly in the East, was found to produce blennorrhagic affections. In the present day this cause is frequently urged as the one which has produced the complaint, and, I have little doubt, with considerable truth; but instrumental ex-

amination too often proves that there is another and a more potent cause—namely, ulceration of the neck of the uterus, which, under circumstances to be mentioned hereafter, occasions discharges in the male.

Worms.—Intestinal worms exert an influence in producing the disease; they are supposed to act by occasioning a sympathetic action between the rectum and the vagina, irritation in the one organ being felt generally in the other; or again, by the passage of the worms from the anus to the vulva. M. Ricord states that he has seen a case where he could distinctly trace the blennorrhagia to this cause. I have met with several cases of blennorrhagia in children, which show the importance of medical men being acquainted with this fact. A woman brought a female child to the hospital, whom she had left very much alone, as she was obliged to go out to work during the day. Observing a discharge on the girl's linen, the mother questioned her, and from the replies she received, believed a boy had given the disease to her daughter. On further interrogation, this was by no means proved; the mother had asked the child if she did not play with such a boy, and the child replying in the affirmative, she concluded the boy had ravished her daughter; a dose of scammony brought away a great number of worms, and the child got perfectly well. Renal and vesical affections, as well as hæmorrhoids, will act in the same way in producing discharge from the male and female organs of generation.

Having now passed in review those agents which can be fairly considered as predisposing and exciting causes of blennorrhagia, we may notice one or two that hardly ought to be.

Some of the origins assigned to this disease are rather curious. I may say at once, that, although I mention them, I do not myself altogether believe them to be predisposing causes.

Sitting on Water-closets is a very common cause assigned. The medical officer of one of our largest Government offices tells me that the men under his care often accuse the closets, and in consequence a pattern for the seat has been devised, which, in a great measure, obviates the possibility of infection.

Making water in a public urinal on a very cold day has been innocently considered the cause of a discharge, the origin of which could be accounted for in no other way.

It should never be forgotten, in considering its various possible or probable causes, that blennorrhagia is no necessary sign of any disease that can be called specific; it may arise under the most varied circumstances and from many different sources; its existence, therefore, is of itself no proof of *libertinism*; it may occur in the most modest female and in the youngest child. In medical jurisprudence, therefore, the necessity of being guarded in our opinion need scarcely be dwelt on, and the surgeon, in family disputes on the subject of contagion, should be especially cautious.

The following case may help to put young surgeons on their guard, and enable them to avoid similar errors of judgment:—A lady's maid

consulted an eminent London practitioner for some complaint affecting the lower part of the abdomen. He persuaded her to allow an examination, when (according to his statement) the hymen was found entire. There was, however, considerable discharge *per vaginam*, with pain in making water, and purulent secretion from the urethra. He told her he suspected that the disease was venereal; she denied it, went back and related what had passed to her mistress, whose husband came to my friend; spoke of the young woman's good previous character; asked if he believed that the complaint was venereal, threatening, if it were so, to turn her off; and thus placed the surgeon in no very enviable position. The result was, that my friend explained to the master the difficulty of diagnosis; the servant kept her place, and the surgeon acknowledges having lost the confidence of the family, who believe him ignorant of this part of his profession. I have never been placed in an exactly similar position, but the following case will show how beneficial a little ordinary caution and tact may prove in restoring confidence and peace to families.

A very respectable-looking female applied to me for a discharge of twenty months' standing, which she asserted to be the consequence of a disease her husband had communicated to her. Instrumental examination detected a large ulceration of the neck of the uterus. This patient stated, that twenty months before consulting me she had miscarried, and the discharge had been increasing ever since. Having observed stains on her husband's linen, she was sure he had gone astray, and that she had contracted the foul disease from him. He denied the accusation, and accused her of infidelity, and they led a most unhappy life. In about three weeks the wife was cured, the husband got well, and they are now perfectly satisfied that the affection in the former was the consequence of the miscarriage, and the discharge in the latter a consequence of the previous affection in the female.

Although, as I have stated, blennorrhagia does not necessarily depend upon a specific virus, but is a non-virulent, non-specific disease, it has one of the characteristics of specific disease—namely, that of being contagious. And this brings us to one of the most important points connected with the subject—namely,

CONTAGION OF BLENNORRHAGIA.

In speaking of the causes of blennorrhagic discharges from the male and female organs of generation, I have avoided as much as possible considering them as contagious, preferring, in the first place to describe the predisposing and exciting causes, and only incidentally alluding to the possibility of the complaint being communicated by contagion; yet this is the most usual method of contracting the disease. That blennorrhagic discharges are peculiarly liable to be thus disseminated, no reasonable doubt can be entertained; although the preceding observations will show that there are a multiplicity of causes independently of contagion which can, and often do produce the affection.

When in the following pages the word contagion is employed, let it be understood to mean, that if the muco-purulent secretion pro-

duced by any of the foregoing causes of blennorrhagia come in contact with another portion of previously healthy mucous membrane, either in the same individual or in another, it will in many cases, but not necessarily in all, produce a similar affection; yet not by virtue of anything specific in the muco-pus. Its action will be like that of any simple chemical irritant.

The experiments made with secretion resulting from inflammatory affections of mucous membranes are few. We possess however a small number of well-recorded facts. Dr. Vetch, at page 242 of his treatise on Diseases of the Eye, gives an instance of having taken the matter from the eye of one man labouring under Egyptian ophthalmia and applied it to the urethra of another patient; the purulent inflammation commenced in thirty-six hours afterwards, and the case assumed a most violent form of gonorrhœa, attended with more tumefaction of the glans penis than usually occurs in that disease. Dr. Vetch states that the experiment failed when applied to the urethra of the same individual from whose eyes the matter had been taken; though it was tried in several instances: hence we learn, that it is not always enough to bring the secretion in contact with a healthy mucous membrane, in order to produce the blennorrhagic affection; and we infer there may be various circumstances which must be combined to produce the disease, although we cannot always seize upon them. We must not expect that every individual running the risk of contagion will be affected, any more than when exposed to a draught of air he should be seized with coryza, although his neighbour on the right and left may be attacked by it.

In some cases we arrive at, or suppose we know, the cause of this difference. We may say that habit, or, as the French call it, *acclimatement*, may account for the impunity with which some individuals expose themselves and yet escape the disease. The following case will illustrate this; I borrow it from a collection published by M. Ricord. A companion to an elderly lady was in the habit of receiving a lover who was a very old friend. During a long intimacy the man contracted no disease, although the lady, his mistress, latterly suffered under a discharge. It happened that a second lover presented himself, who was previously perfectly free from disease; no sooner, however, had he enjoyed her favours, than he found himself attacked with a discharge, though the original lover, notwithstanding frequent intercourse, contracted no disease. The second lover recovered from his complaint, and visited this lady afterwards; but he did not again become infected. But a third was, like his predecessor, subject to the same penalty for her first favour, and in his turn found himself exempt from a second attack. On examining the female, M. Ricord noticed a catarrh of the uterus, which was more or less purulent, and a granular appearance on the surface of the neck of the uterus was very apparent, similar to that delineated in Plate IV., Fig 2. Now in this case it appears that habit prevented the original lover from contracting a blennorrhagia, though exposed in the same manner as the other two, who in their turn became insensible to a second infection. In this respect habit may have its influ-

ence, as in cases of certain fevers which are said not to attack the natives, but only strangers, who become, after a time, unsusceptible, though exposed to the same influences.

This case, however, does not prove that a man once infected will necessarily become acclimatized. I have seen cases which incline me to believe the contrary. I have attended several married men for discharges from the urethra contracted from their wives, who suffered in a similar way, and have cured them. But as soon as they have returned to cohabitation, the affection of the urethra has returned again and again, until the women have been treated. These married women are usually found suffering from some chronic affection of the uterus. The repeated occurrence of these cases induces me now to decline prescribing for the husband unless the wife will at the same time place herself under treatment.

Although contagion is one of the most frequent causes of blennorrhagia, surgeons must not be too credulous, otherwise they will be liable to be often deceived. Women will frequently make up a story as to the manner in which they have contracted a discharge. It is not uncommon for nurses, for example, to account for a discharge which they may be subject to, by saying they have contracted it from the child they have taken in to nurse, wishing to make you believe that it is through the milk they themselves have become affected. If, on examining such children, no disease of the mouth or genital organs can be found, the surgeon may safely contradict them, as contagion in such a way is impossible.

In private practice the subject of the contagion of blennorrhagia comes before the surgeon in a thousand ways, and the manner in which he decides the questions which arise must depend upon the knowledge he has previously acquired of this very difficult and puzzling complaint—which, without the employment of the speculum, it is impossible thoroughly to investigate.

A man consults you about a discharge having many or all the characters of gonorrhœa, but he has not been subject to any of the exciting or predisposing causes above cited, and has cohabited with one female of whose fidelity he has not the least suspicion. No doubt can however exist, that he is labouring under a discharge putting on many of the characters of gonorrhœa; for instance, pain in making water, chordee, profuse discharge, and its attending symptoms. In different cases (for in London their name is legion) the symptoms may be more or less severe, varying from the slightest gleet up to those of acute blennorrhagia, but this makes little difference in the diagnosis; the important question is, how did your patient contract the complaint. Nothing perhaps but private practice, and a tolerably considerable share of it, can give much confidence in answering this question.

Before pretending to give an opinion I have generally desired my patient to let me see the female with whom he cohabits, and in the majority of cases she is particularly anxious to submit to an examination, protests in the most energetic terms her innocence, and denies the possibility of having contracted the affection from any third

person ; often she goes further, denies ever having had, or having at the moment of examination, a discharge of any kind ; some put in a sort of proviso, *more than they have seen for years past.*

The number of examinations I have thus made are very numerous, and in most I find an almost invariable train of symptoms. The female is probably a delicate, fair, pale creature, who has been suffering in her general health for years, liable to indigestion, nervousness, and its attendant evils, complaining of pain in the back, shooting down the front of the thighs, unable to bear exertion, and in consequence leading a most indolent life ; accustomed to confined bowels, irregular menstruation, amounting sometimes to amenorrhœa, in other instances attended with the most profuse hæmorrhage, complaining of more or less pain in sexual intercourse, and admitting the existence of *whites*, or *weakness* as females call it, in the short intervals between menstruation.

Instrumental examination detects a lax pale vagina, with more or less profuse glairy discharge, frequently with simple ulceration of the anterior or posterior lip of the uterus, (see Plate IV., Fig. 1.) the opening of which may be completely blocked up with the glairy white of egg discharge, seen in Plate IV., Fig. 2 ; entangled in this may be noticed globules of pus, and the secretion from the vagina may be more or less purulent, but on pressing the urethra no pus passes out. In some cases the uterus may be enlarged, in others displaced ; from the laxity of the parts, the examination is attended with very little pain, and where the patient suffers, it appears to depend upon nervousness more than upon any other cause.

Such results authorize the tolerably confident assertion that the female has given the patient his ailment, because she has been long labouring under the disease called "*Whites*," that it is this complaint which has produced the discharge in him, and that he has no reason to believe that she has been unfaithful. In fact, as a general rule, the sexual desire in such females has been reduced to the lowest ebb, and infidelity is not one of their sins ; but by degrees they have got into such a state that local treatment will alone cure the complaint, and the mere treatment for indigestion will avail nothing.

The patient (and perhaps my reader) will ask, "But why did not this occur in the commencement of the acquaintance ? Six weeks or more of cohabitation has passed, and it is only within a few days that I have had this disease, although I have exposed myself during the whole time." "You are attempting to screen this woman, who must have been guilty."

There is sometimes difficulty in answering such questions to the patient's satisfaction, but the explanation is, medically, easy enough. As long as these secretions from the female are destitute of pus, and the uterus and vagina are in that chronic state giving rise to white discharges,—as sometimes happens when connexion is abstained from, or only seldom indulged in,—contamination will not probably occur. But if inordinate sexual intercourse, from strong constitutional power of the male, follows, inflammation is set up in the organs of the female, and, the secretion becoming purulent, contagion results. This happens particularly, if the man indulges freely in malt liquors, or has

been taking violent exercise. The fact at any rate is certain, that a man may cohabit for a week with a woman labouring under this kind of uterine disease, without harm, but at last become infected by her without any unfaithfulness on her part.

Cases like the following sometimes appear very singular. A married man has connexion with a female, whom he has every reason to suppose not diseased; he notices nothing for a fortnight or so, when, after having had connexion with his wife, a discharge comes on. On examination, the wife is found to have long been subject to the whites. I have seen these consequences happen so frequently that I am almost inclined to believe, that the unmarried woman was not diseased, but that had not the husband had connexion with her, no disease would have appeared after intercourse with his wife.

It seems, too, from some instances as if the mere fact of frequent connexion between two healthy parties may beget disease of this kind. A gentleman came to me with cedema of the penis, and slight discharge of two days' standing. His account was that he had taken a girl away from her friends, had repeated connexion with her for a week, and then found himself with the above symptoms. In this case I have no doubt the intercourse set up inflammation in the delicate girl, and this reacted on the male.

The opinions here expressed are at variance with those entertained by many professional men, who think they can distinguish between gonorrhœa and common vaginitis. And they ask why the husbands of their patients do not contract these discharges. I think they often do, but do not consult their own medical man, from fear of imputations.

A gentleman came to me with a thin serous discharge, which had resisted all treatment. There was no stricture or irritation of the bladder to account for the complaint, and he told me his wife was affected with uterine disease and had been under the care of six doctors without avail. I treated this gentleman in the usual way, and when he was well he brought his wife to me, and, as usual, I found extensive disease of the os uteri, which tonics and external lotions had failed in curing, although this lady had had the patience to employ them for some years, but in no single instance had she been called upon to submit to an examination. In a few weeks she perfectly recovered; and both husband and wife have since enjoyed excellent health. I could give many similar instances of innocently-contracted disease embittering married life.

The real source of disease is sometimes difficult of discovery from other circumstances. I have seen instances in which there was every reason to believe that a female, by whom a man suspected he had been infected, had, shortly before examination, employed injections, and successfully, to remove all trace of discharge. Disease of the uterus can with difficulty be detected in such cases. They are, however, rare, and the obvious shrewdness of a woman who will resort to such expedients will generally arouse the suspicions of a practitioner who knows anything of character. If these discharges can occur in males who have cohabited with females theretofore pure, can we be surprised if prostitutes communicate the disease to men, and yet on examination are not found to be suffering themselves from anything but the whites?

Some years ago a woman was murdered in a low brothel in St. Giles's by a man of the name of Connor, who committed the crime to avenge himself on his paramour, from whom he had contracted gonorrhœa. Through the kindness of Dr. Reid and Mr. Fitzgerald, I was enabled to examine the organs of generation of the murdered woman. The vagina presented nothing unusual; no marks of syphilis could be detected; the os uteri presented a long chink-like aperture, and was completely blocked up by a gelatinous transparent discharge, which I brought home between two pieces of glass to examine under the microscope. Beneath the mucous membrane of the os uteri the vessels were somewhat turgid. The fallopian tubes were diseased, and the ovaries enlarged, but were not examined, as they were kept for other purposes. Under the microscope, the secretion was found to be free from spermatozoa, and consisted principally of *mucous corpuscles*; which, like those usually found about the os uteri, displayed that fibrous appearance so frequently detected in mucus. A considerable quantity of epithelial scales was found in the secretion of the vagina.

I mention the case here, to show that the subject of contagion may become an important item in medical jurisprudence, although it has not yet met with that attention it deserves.

That prostitutes suffer largely from leucorrhœa, I had the best means of judging in my late visit to Paris, when by the side of M. Denis, I saw some hundreds of the French public women examined. I could not have believed, except by such demonstration, that so many suffered from this disease. If the majority of these women had been brought to me to be examined, I should have recommended their confinement as dangerously liable to communicate gonorrhœa. Indeed, had all the women who required it been sent to the Paris hospitals, there would not have been room for them, large as these noble institutions are. It is for this reason partly that the medical authorities neglect these affections, and send to hospital only those who have chancres. Moreover, it is doubtful if the hospital is the best place for cases of leucorrhœa.

On the general question of contagion and the power of habit, or acclimatization, as a defence to it, I have had occasion already formally to express my opinion, in reply to the following inquiries, which, with my answers, will not be out of place here:—

“6, Camden Square, Nov. 26, 1849.

“MY DEAR SIR,—Will you favour me with a reply to the following queries?

“A man, having taken smallpox, cannot take it again the next week, or the next month.

“A man in Essex, just recovered from an *ague*, does not take another for a long time, though living in the fens.

“A man, who has just recovered from a fit of the gout, is *safe* for six months at least, though he drinks his port as freely as ever.

“A man contracts a gonorrhœa; gets thoroughly cured, no stricture or any other trouble remaining. In short, he is quite *well*, and no mistake.

“ *Queries.*—

“ 1. How soon afterwards can he contract ANOTHER gonorrhœa, if he exposes himself to it? Can a soldier contract two, three, four, five, gonorrhœas in one year, if he be fool enough to expose himself to the ‘temptation’?”

“ 2. Does the mucous membrane of the urethra acquire any temporary INDIFFERENCE to the gonorrhœal poison by once suffering the contact of it? And if there be such temporary unsusceptibility or indifference, for how long a time does it last?”

“ If you will kindly tell me the law in regard to ‘urethral susceptibility,’ prior to my lecture to-morrow afternoon, on exanthematous susceptibility, ‘*Eris mihi magnus Apollo.*’

“ Yours, very truly,

“ G. GREGORY.

“ To W. Acton, Esq.”

“ Answer to query 1.—A man may contract, and often does suffer from, a second gonorrhœa immediately after his recovery from the first. The same irritating secretion may not produce it, but let him have connexion with another female labouring under a leucorrhœal or purulent discharge from the vagina, and he may become diseased.

Answer to query 2.—The mucous membrane of the urethra does not, in my opinion, acquire any, even temporary, indifference to gonorrhœal secretion by once suffering the contact of it. You will observe that I say secretion, not poison; for I have no evidence of the existence of any specific quality in the secretion to which the term poison can be applied. Ammonia was injected into the urethra by Swediaur, and the result was gonorrhœa. The ammonia was a chemical irritant, not a poison.

The case is different with regard to constitutional syphilis. Insusceptibility to secondary syphilitic affection does exist, and is a curious fact, not generally known or admitted. If a man contracts chancre, followed by secondary symptoms, and is effectually cured, he may, *generally*, consider himself exempt from the possibility of a second constitutional affection, although he may contract primary symptoms again and again. Such a law as this, however, will not prevent a series of *relapses* of secondary symptoms during many successive years, when the syphilitic diathesis is established.”

Before quitting the subject of contagion, I should say a few words on certificates, a subject which very frequently annoys a medical man. In consequence of judicial inquiries, or family feuds, a female presents herself, and asks the surgeon for a certificate to the effect that she is not subject to a contagious discharge, or is not in a condition to communicate any discharge, under which she herself is labouring, to another person.

After a careful examination, one to the following effect may be given :—

“ I certify, &c., that ——— presents no symptoms of a *syphilitic* disease, but suffers from a catarrh of the vagina, uterus, &c., and may probably (or not, as may be,) communicate the disease to another.”

No surgeon can be warranted in stating more.

BLENNORRHAGIA AS AN EPIDEMIC.—Blennorrhagia, in the preceding paragraph, has been considered as a sporadic disease, but it is represented by some authors as occurring epidemically. "One of these so-called epidemics," says M. Ricord, "has fallen under my notice. During the time the Church of the Madeleine was being built, there reigned an epidemic among the masons. This occurred to so great an extent, that when a mason presented himself as an out-patient, I immediately told him he worked at that building, and came to consult me for gonorrhœa, and the poor fellow thought me a prophet, so sure was I to be right in my statement. This supposed epidemic simply depended on the collection of a great number of workmen together, who lived in common with a few women suffering under blennorrhagia." Such is the explanation of these so called epidemics, and the word cannot be more unfitly used as applied to such cases.

PERIOD OF APPEARANCE.—It will not, perhaps, be out of place here to say a few words on the period that elapses between exposure to the causes, and the occurrence of the blennorrhagic disease. The period varies from twenty-four hours to some few days, and may depend upon the greater or less re-action which takes place, as well as other circumstances ; for a certain space of time always passes between the last connexion and the appearance of the disease.

In estimating the probable period of the occurrence of discharge after connexion, various circumstances must be borne in mind, as in the instance previously alluded to (p. 10), where it occurred on the next morning ; here, however, it was clearly traced to the injection, which produced a discharge within twelve hours after connexion, and the female might have been accused or suspected without the slightest cause.

Some authors have observed cases which occur so long after connexion, that they have been induced to believe in what is called *incubation*. Among others, Bell cites a case to prove this point. A person went on board a ship, where he could have no means of contracting gonorrhœa, (adds Bell,) and on the fiftieth day after being at sea, a discharge from the urethra appeared and continued some time. This has been cited as a case of gonorrhœa which was contracted on shore, and broke out at the end of fifty days : the intervening time being considered as the period of incubation.

Now, giving Bell all credit for veracity, it does not seem necessary that we should come to his conclusion. The man might have contracted the discharge by certain mal-practices. But even this was not necessary to account for the phenomenon. It has been above stated that various causes will produce the disease, as well as contagion, particularly scorbutic complaints. Is it not more rational, then, to suppose that these very rare and exceptional cases depend on some of the predisposing or exciting causes above alluded to, rather than that incubation exists, or that gonorrhœa may be concealed in the system, to break out at a future time ?

I believe, in fine, that blennorrhagic affections are produced soon after the causes which excite them come into action, although cir-

cumstances may retard their appearance two or three days : in this respect they resemble other diseases.

SYMPTOMS AND COURSE OF BLENNORRHAGIA.

A blennorrhagic affection may be ushered in by loss of appetite and the other signs of an inflammatory disease, constituting the *general symptoms* : these are, however, often absent.

The *Local Symptoms* consist in heat, a tension of the parts, followed by augmentation of the healthy secretion. The natural secretion, however, instead of increasing, may diminish or altogether cease, giving rise to that form which has been vulgarly called *dry clap*. The affection does not, however, remain long in this state ; for the secretion again becomes not only increased but altered, taking on a muco-purulent character, and the pus will preponderate in proportion to the severity of the inflammation of the cellular tissue. (See page 4.) The discharge changes in colour ; at first it is milky, then more or less grey or green, or, in proportion as blood is mixed with it, it will have various brown or dark shades. The odour as well as the thickness of the discharge will also vary much.

The *Course* of the affection will be either acute or chronic ; however, the symptoms have usually a tendency to increase until the twelfth or twentieth day ; from that period they as gradually decrease in severity ; from being purulent, the discharge assumes a muco-purulent or simple mucous character ; and lastly, only an augmented but natural secretion remains.

The *Terminations* of the affection may be various ; soon after its appearance, the blennorrhagia may terminate suddenly, either under the influence of treatment, or without any reason that we can assign : such may be called *delitescence*. It has been supposed that the disease, after existing a certain length of time, may be cured locally and suddenly—but at the risk of being driven into the system and breaking out afresh in some other part ; in other words, that a metastasis of blennorrhagia may take place, analogous to that which occurs in rheumatism. This brings me to consider an important question, namely,

Metastasis.—Patients will tell you that on the last occasion Mr. So-and-so *would* not cure the clap speedily, for fear of driving it into the system, and having been recommended to you, they hope you will not effect a rapid cure at the expense of their general health. In the present day, these prejudices have still to be counteracted ; not that I believe the profession at large entertain them, but as they lurk in old-fashioned corners, and every now and then appear, a few words must be said on the subject.

I fear in many instances these ideas may be traced to the difficulty practitioners experience in curing rapidly discharges from the male and female organs of generation. I have heard of surgeons who find it advisable to propagate these opinions, which are thought to point out the danger of applying to modern practitioners, and cause certain old-womanish methods of treatment to be voted safe, and reconcile the patient to submit to a nine months' treatment with drugs and lotions, and, as I said before, are constantly used to veil ignorance. There are

others, however, though yearly fewer, who appear conscientiously convinced of the truth of these dogmas, and would not, if they could, cure their patients. Whether the doctor or the patient is most to be pitied, it is difficult to say, but my own experience may be of use to the one and the other.

In the first place, it is untrue to assert that a discharge rapidly cured will be followed by any general disease. The modern practice of rapidly curing gonorrhœa sets this question entirely at rest. As to the cases of rheumatism (and I shall have much to say hereafter on this subject), I may assert that in nine cases out of ten, the rheumatic affection will not be caused by repressing a clap, inasmuch as it is generally found impossible to cure the discharge (when once freely established) in cases where rheumatism co-exists. I have had from time to time under my care a gentleman, who no sooner contracted a discharge, than he immediately applied to me in order that I might instantly check it by the most active remedies; experience having taught him that, unless the discharge from the urethra was instantly cured, the complaint would inevitably be followed by rheumatism of a most severe form. In the commencement of my London practice, I entirely disagreed with these practical views of patients, but more extended experience has convinced me that, in many constitutions, the only way to avoid rheumatism coming on, is rapidly to cure the discharge, the portal apparently through which rheumatism enters the constitution. I will detail a case which has been seen by many besides myself in London, and unfortunately, without affording any relief, until after months of treatment.

A gentleman, still under twenty-six, was subject as a boy to rheumatic gout (so he says); a few years ago he contracted gonorrhœa for the first time, which was attended with a most severe form of rheumatism, in spite of all that London surgeons and physicians could do for him. A residence on the Continent was the only means by which a cure was effected. Having been such a martyr to the complaint, and resolved not to run the chances of infection again from promiscuous intercourse, he married; some few months after his nuptials I treated him for a severe attack of rheumatism which followed the influenza; he recovered rapidly from these complaints, and remained perfectly well; his wife, however, began to complain of leucorrhœa, and my patient came again under my care with the slightest possible discharge. Knowing all the circumstances of the case, I advised some simple astringent wash and aperient medicine; instead of abating, the discharge increased, and was followed, in spite of all advice, and the best-concerted measures, by rheumatic ophthalmia, inflammation of the bladder, and general rheumatism. The disease, in a subacute form, was no sooner cured in one set of muscles than it broke out in another. Instead of driving the disease into the system, I was for some months unable to master the discharge, and it went on uncontrolled by all our remedies, a stumbling-block to the best medical and surgical opinions in London.

I was recently (1859) again called on to attend this gentleman, who after some years of good health, was suddenly seized with rheumatism,

the immediate cause of which arose, in his opinion, from having had an instrument passed. I ought to say that he had ever since his last attack been subject to stricture, with some irritation of the bladder, and had been a free liver, without taking much exercise. As soon as the rheumatic-attack commenced, the bladder, muscles, joints, and eyes became successively affected; all the medical skill of London was called in with as little avail as on the former occasion—every sort of treatment was tried, and failed, until apparently the disease wore itself out. A peculiarity in this case was, that the patient could not bear iodide of potash in large doses.

Another case of the same kind may be interesting. A stud groom was sent to me from the country with an abundant discharge from the urethra, for which he had been taking some mixture of cubebs and copaiba without any relief. As the difficulty in making water was great, I passed a bougie, and discovered three very tight strictures in the spongy part of the urethra. As the discharge was abundant, I prescribed a weak injection and copaiba capsules. On the following day I was sent for to this patient, whom I found in bed with one of the severest attacks of rheumatism in the knee I ever saw. The joint was swollen, fluid was effused into it, and he was unable to obtain any rest. He then told me that he had been subject on three previous occasions to attacks of what he himself called gonorrhœal-rheumatism, which he attributed to taking copaiba. I found the discharge from the urethra considerably diminished, and he told me, that after the first passage of the bougie he had made water better than he had done for years. I felt it difficult to determine what was the direct cause of the rheumatic attack in the knee. I resolved, however, to continue the treatment. I applied fomentations to the knee, gave a lead injection, then large doses of hydriodate of potash, with Dover's powders at night; left off the copaiba, but passed an instrument every other day, and in a short time he was able to resume his usual avocations.

Speaking from experience, I would deliberately advise the young practitioner to attempt to cure gonorrhœa as rapidly as possible in a patient who has been liable to rheumatism, and not to be deterred by the fear of driving the disease into the system; it will rush in fast enough.

The observations which I have made on rheumatism apply with equal force to other complaints. M. Ricord states, that after a careful consideration of cases, where the affection is supposed to be driven into the system,—and cases of this kind have been observed in his hospital from time to time,—he is by no means convinced that a blennorrhagic affection is cured in one part of the body, merely to break out in another. From what he has observed as happening occasionally, he is induced to believe that some other affection may come on during, or coincide with, a blennorrhagia. This disease, acting on revulsive principles, (as a blister or seton would,) may moderate or cure the blennorrhagia. For instance, should a patient, during a gonorrhœa, be seized with any other affection, say fever, that may have the effect of producing such a revulsive action, that the discharge will for the time abate. I have seen this happen pretty often; but

such is not the opinion usually entertained. Persons believe, for example, that a gonorrhœa quickly suppressed by treatment will give rise to ophthalmia or swelled testicle.

These erroneous opinions deserve a few minutes' consideration. In the first place, I deny that gonorrhœa speedily cured will produce an affection of the testis; in my own practice I have never seen it happen, except under circumstances which will be mentioned hereafter, when the treatment of that disease comes under our consideration. Far however from believing that we may cure the disease too rapidly, I think, on the contrary, that we cannot cure it quickly enough; and unless we take active steps, the patient will be a sufferer for many months; and even in the worst cases, it is better to run the slight risk of producing swelled testicle, than allow gonorrhœa to run on unchecked, for as long as the discharge exists swelled testis may come on. I will cite a case illustrative of my meaning and treatment. A gentleman was under the care of a City surgeon for gonorrhœa during four months; swelled testis came on, although no injection was used, and the latter affection gradually disappeared, but the discharge remained as bad as ever; and, the patient getting tired of the lingering treatment, applied to me. I candidly told him that in his case there must be a great predisposition to affection of the testis, and I was fearful that if I employed my usual course of treatment, I might (although not necessarily) produce a repetition of the affection of the testis. Having pointed out the risk (which, as I explained to him, I am always ready to incur, provided a patient has never had swelled testis,) and stated my opinion, that without the employment of injections, I could not guarantee a cure, my patient readily submitted. For the first few days, all went on well; the chord then began to be painful, and an affection of the testis gradually came on. The usual treatment speedily however cured the affection of the testis,—and convinced of the correctness of my opinions,—no sooner had the inflammation abated in the organ, than I commenced astringent injections with the usual precautions of strapping the testis, and my patient in three weeks, notwithstanding all the unfavourable circumstances above detailed, perfectly recovered. I have found that this apparently rash treatment is practically consistent with the common-sense view of the case, and the successful result in a large number of such instances enables me with confidence to recommend it. In the majority of patients, swelled testicle will not arise, although they may have suffered from a previous attack of the complaint.

Resolution.—The most ordinary termination of blennorrhagia is by resolution; that is to say, a gradual diminution in the symptoms and secretion takes place.

Such has been always considered the most favourable termination; I shall again allude to the subject under the head of treatment; but from the observations just made, it will be seen that I do not think gonorrhœa should be allowed to go on unchecked. I consider a cure by delitescence far preferable.

Continuation under the Chronic Form.—Surgeons have usually stated that the affection may terminate in a chronic form, Gleet. Such language is, however, not correct, as their so-called termination

is undoubtedly but a *continuation* of the disease under another designation. M. Ricord observes, he was consulted by a military man for a gleet which he had been subject to for thirty years. Could it then be said that the blennorrhagia terminated thirty years ago, as he had suffered ever since that period. It may be more accurately stated that the acute stage of the disease may pass into a chronic form.

Blennorrhagia when unchecked may produce various alterations of the tissues, which will be described under the term

PATHOLOGY.

The lesions of the mucous membranes resulting from blennorrhagia are numerous, yet very few specimens of the pathological changes are preserved in even our best museums. Works on the venereal disease are equally deficient in information on these points. In books on this subject one writer has copied another, and seems to have dissected rather books than bodies. Since the time of Morgagni, we have added few new pathological illustrations on the disease, and we seldom see the urethra opened in post-mortem examinations. For these reasons I shall describe the subject in the following pages at some length. Hunter states it as his opinion, founded on the examination of the urethra of two men who were hung while suffering under gonorrhœa, that this disease is attended with no changes of the mucous membrane; other writers, in copying him, have been contented with this view; although they forget that a mucous membrane, wherever it is placed, is subject to certain diseases common to the tissue. Why should the urethra, then, be more exempt from changes of structure than other similar membranes?

Sir A. Cooper says in his Lectures, fifth edition, page 499,—

“Many years ago I had an opportunity of examining the urethra of a man who was executed, and who had gonorrhœa at the time of his execution. The inflammation had extended down to the bulb of the urethra; for an inch to an inch and a half down the urethra was exceedingly red, and there was some effusion of matter on the internal surface; the urethra was red at the bulb, but not of so deep a colour. The inflammation is therefore not confined to an inch or an inch and a half down the urethra, but often extends over the bulb of the urethra, and in this way often produces stricture. In the case to which I allude, the gonorrhœal inflammation had extended at least seven inches down the urethra. In general, on examination of a subject who has died under gonorrhœa, you will find a small quantity of purulent matter at the extremity of the penis, and inflammation extending about an inch and a half down the urethra, which, if exposed to the air for twenty-four hours, assumes a blood redness.”

At page 17 will be found the *post-mortem* appearances of the generative organs of a woman murdered by her paramour, for having given him the clap. The appearances there given show that no great change had taken place in the mucous membrane. But observations of the genito-urinary mucous surfaces during life, as well as after death, have clearly proved, that both acute and chronic inflammation will produce such alterations in mucous membranes as are not generally studied, or even known. By means of the speculum, the

state of the female organs in cases of blennorrhagia of these parts has been sufficiently investigated; and, from the analogy of the tissues, it may rationally be supposed that the same morbid appearances would be found in the male, could we observe his urethra. Gonorrhœa, however, so seldom terminates fatally, that such observations cannot often be made.

The following appearances I can speak of, from my own observation, as occurring in the vagina, &c.

In acute stages of blennorrhagia the mucous membrane is simply redder than usual in its whole extent, exactly resembling what takes place in *balanitis*, commonly called gonorrhœa præputialis. (See Plate II. ; and Plate III. Fig. 1.) In some cases this redness, accompanied by a good deal of local swelling, puts on an erysipelatous character, which has induced Fabre to term it *gonorrhée sèche*, as it gives rise to very little discharge.

In other instances there exist distinct patches of reddened cuticle or epithelium, surrounded by a healthy appearance of the mucous membrane; these patches are covered with little pieces of detached and softened cuticle, or spots, as seen in the drawing, Plate III. Fig. 1. All species of discharges may accompany these morbid states, and require to be removed with lint before these appearances are distinctly brought into view.

In some places there may be erosion of the epithelium, and distinct granulations may be seen emerging from the body of the mucous membrane, as seen in Plate III. Fig. 2. Ulcerations of all characters may be met with in any point of the internal organs in the female, as most Englishmen who have attended the Parisian hospitals have had ample means of observing, and as may be seen in Plate IV. Fig. 1. When the disease is in a chronic state, I have often observed the mucous membrane paler than usual, but presenting at certain points a tumefied appearance, and stripped of epithelium, or covered by pale granulations similar to those observed in cases of chronic inflammation of the conjunctiva. In this condition the surface is very liable to bleed under slight causes. In some cases I have witnessed distinct vegetations in the whole course of the vagina, as well as at the orifice of the urethra. In Plate I. Fig. 2, vegetations are seen sprouting from the urethra of the male. This is the second case of the kind which I have observed during the last winter.

M. Ricord states he has, in two cases, (examined after death,) found distinct ulcerations with an indurated base situated on the mucous membrane, an inch and a half within the carunculæ myrtiformes. A woodcut showing ulcerations of the urethra in the male will be given in the Second Part of this work, under the chapter, "Chancre of the Urethra." In neither of these cases was there any analogy to cancer or scirrhus disease.

In addition to the changes* above mentioned, distinct induration,

* The illustrations to which I have referred—made from drawings executed in France—place these lesions now beyond a doubt, and the many opportunities of demonstrating their existence in England, prove that they occur among all nations as well as in all climates. The experience of others has now corroborated my state-

or cicatrices, and other morbid appearances, may occur; but any further description must be reserved for what we shall have to say on stricture.

RELAPSES.

To credit some surgeons, relapses appear almost the rule, and the cure forms the exception. But within the last few years, as the knowledge of these complaints has become more general, and our treatment more scientific, the difficulties of curing discharges have somewhat abated, and relapses are more uncommon. Still, those engaged in large consulting practices are fully conversant with the thousand-and-one causes leading to a relapse; in the preceding pages many such have been pointed out, and others still remain to be noticed. A relapse often occurs from the omission of some one particular remedy or precaution, although all others may have been employed. Frequently a relapse depends upon the indiscretion of a patient, particularly in diet. Indulgence in fermented liquors, taking warm baths too soon, omitting treatment, violent exercise, saline medicines, sexual excitement during the day, or lascivious dreams at night, readily account for the return.

In other cases a relapse may be traced to the same cause which originally produced it, reacting on a very susceptible mucous membrane, as when a patient is cured, and again cohabits with the same female who gave him the discharge, and who has not undergone treatment. This is a very fruitful source of relapse, and one that is not always recognised, and brings the treatment of the surgeon into great disrepute.

In not a few cases the fault rests with the surgeon, who forgets to impress on his patient the necessity of excluding from his diet certain articles of food or drink, and in not enjoining extra precaution for the first few weeks following convalescence. Relapses may generally be traced to some one or other of these causes; still they are less common in practice than formerly.

We occasionally meet with a few instances which admit of none of these explanations. Patients deny having exposed themselves to anything likely to do harm. They have implicitly obeyed all your injunctions; and yet, after remaining well some few days, a relapse occurs. This sometimes happens in a patient who on former occasions has been readily and permanently cured. Persons in large practice undoubtedly meet with a few of these instances; but it is not by ringing the changes on the various remedies, that the scientific surgeon will hope to cure such instances; it is in studying the habits of the patient, and recommending the treatment discussed in the chapter on Gleet.

Blennorrhagia may not only return, but recur at regular intervals. I have seen a few cases of this kind, which I may call *periodic*, as they were accompanied with intermittent fever, and seemed to depend upon irritation about the neck of the bladder. Other causes, also, may influence the return of blennorrhagia; thus certain patients mention that these affections are exactly the same in this country, and are quite as common as in Paris, although they were not recognised in London previously to 1840. They occur in modest women as well as in prostitutes.

have an annual gonorrhœa, occurring every winter. In such instances drinking and dancing may reproduce the discharge, if there be any predisposition.

Those periodical attacks of blennorrhagia, again, depend upon causes which we are not able always to ascertain, independently of sexual indulgence. "I have," says M. Ricord, "seen more than one person attacked with gonorrhœa annually, in consequence of eating asparagus, and, on leaving off this vegetable, the discharge has ceased."

COMPLICATIONS.

In the preceding pages, blennorrhagia has been described as it *may* occur; but in a variety of instances it is not such a simple disease; numerous accidents arise during its course, and will be here described in connexion with its Complications. The local swelling may be so great that the urine will be prevented from passing along the canal, giving rise to retention depending upon an inflammatory stricture. The lymphatic vessels may become likewise inflamed, and buboes or swelling of the lymphatic glands result, similar to what occurs after irritation in any part of the foot. These buboes may be the result of a direct extension of the inflammation along the lymphatic vessels to the glands, or may depend upon sympathy, or that law of the animal economy which causes the one extremity of a canal or tube, when irritated, to swell or sympathize with the other extremity, without the intervening part of the tube or canal being sensibly affected; these last are properly called sympathetic buboes.

Abscesses not unfrequently attend the acuter forms of blennorrhagia. We meet with these in the vulva, especially in young females; in the male they occur about the frænum, and give rise to fistula, if not properly treated.

I have seen hæmorrhage occur during the course of a blennorrhagia, which, like other hæmorrhages from mucous membranes, may depend upon simple exudation from the surface, or upon the rupture of vessels around ulcerations, or from their varicose condition.

Fresh exposure to contagion, as well as any excess in diet, by exaggerating the severity of a previously existing blennorrhagia, will act as a severe complication, by increasing the morbid condition of the mucous membrane.

Chancre is a frequent complication; it keeps up the irritation, and gives rise to a secretion, which, from its position, we cannot always remove as soon as it is formed.

Constitutional syphilis has been above stated to be a frequent cause; it may likewise be a complication, as will appear in subsequent chapters.

I shall hereafter describe one of the most frequent complications; namely, epididymitis, or what is usually termed swelled testicle; but the complaint cannot find a place here, as we are describing only the general features of the affection, without reference to locality.

Notice has previously been taken of rheumatism occurring during the course of a blennorrhagia. Authors generally are not agreed upon the relation between these two affections. I shall speak of it in a special chapter.

THE DIAGNOSIS OF BLENNORRHAGIA.

From what has been above stated, it might appear that the diagnosis of blennorrhagia is easy, characterized as the disease is by a mucopurulent discharge. There are, however, several points which are deserving of attention, as distinguishing the position, intensity, &c. of the affection.

The character of the discharge will often give the surgeon some notion of the exact situation of the disease. When he observes a glairy secretion, resembling the white of egg, oozing from the vagina, he is justified in stating that the neck of the uterus is affected; when the discharge is composed of muco-pus, he may be assured that it arises from the urethra, vulva, or vagina, &c. Some assistance may be derived likewise from chemical tests, to decide whence the secretion issues, as it is found that the muco-pus of the vagina is acid, whereas that coming from other sources is alkaline.

If the mucous membrane be alone inflamed, the secretion is formed almost solely of mucus; when, however, the sub-mucous tissue become implicated, we observe the secretion assuming a more or less purulent character in proportion as this tissue is affected.

The existence of blood, mixed with muco-pus, will generally lead the surgeon to expect ulceration of the canal which he cannot examine; but this may become a source of error, as blood may be poured out in consequence of excessive inflammation. Usually, however, I have been able to distinguish, or at least to suspect, the existence of a chancre, from the appearance of the discharge, especially when it has a greyish or reddish tint, and is of a thin consistence; and inoculation has frequently proved these surmises to be correct. I shall not here stop to point out the error of those who consider that because blood is mixed with the blennorrhagic secretion, the disease was contracted from a woman during her menstrual period.

Lallemand of Montpellier has, in his work, entitled "*Les Pertes Seminales*," laid great stress on the existence of semen in these discharges of a chronic character. A careful examination, however, should be made before it is asserted that the spermatic fluid is present, as what is often called semen is nothing more than simple mucus, which ought not to be mistaken for the semen, as it exhibits no spermatozoa, when viewed under the microscope.* When semen is present in the discharge, we may usually affirm that blennorrhagia has affected the chord, and, by the irritation it produces, gives rise to the ejaculation of semen, which becomes mixed with the secretion. The acute may be distinguished from the chronic complaint in the urethra, by the former being accompanied with pain in making water, and the secretion being purulent; whereas the latter is accompanied by no scalding in making water, and the secretion is mucous. It will hereafter be found that the existence of the one or the other stage occasions a great difference in the treatment.

A very important point of diagnosis may be drawn from the existence of chancre, as it enables the surgeon to decide whether a blen-

* For further particulars relative to seminal discharges, I may refer to my separate volume "*On the Functional Disorders of the Reproductive Organs*," p. 38.

norrhagia is of a virulent or a mild character. This point has been very much contested; and although the expressions virulent and mild are often met with, yet no two medical men are agreed upon the use of these terms. I shall, before explaining my own opinion upon this point, say a few words on the various suppositions which have been lately brought forward.

Supposing that a male or female is labouring under blennorrhagia, the question to be decided is, whether it be a virulent or a mild affection. Some surgeons state, that before coming to an opinion we must wait for the occurrence of secondary symptoms; if they appear, it is a sufficient reason to call the blennorrhagia which has preceded, a virulent complaint. This opinion is just; but we would ask, of what use is a diagnostic sign which can be only given so late?

Other authors have considered the existence of buboes as the distinguishing character of the two forms of the disease; but, as will hereafter be shown, no dependence can be placed upon this sign, for any simple irritation on the foot, &c., will give rise to buboes; therefore the mere circumstance of buboes, without reference to the pus they secrete, demonstrates nothing.

Some, again, state that a virulent blennorrhagia follows connexion with a diseased person; whereas a mild affection may follow connexion with a pure one. These distinctions, founded on the consideration of the causes, can hardly be safely adopted. Diagnosis in such cases ought not to be based on supposed morality or immorality.

Little dependence can likewise be placed on the opinion of those who state that the green colour, as well as the presence of blood in the discharge, or the breaking out of the disease a long time after connexion, can enable us to distinguish a virulent from a mild blennorrhagia.

Not long since, at the Academy of Medicine, it was stated that the duration of the disease may serve as a distinguishing feature of the two forms; a virulent complaint was stated as likely to last forty days, and a mild one twenty; this, however, is a very erroneous opinion, as will presently be shown.*

The acute nature of the complaint, and the existence of ulceration, has been also cited as proving the existence of a virulent affection: this likewise seems to be incorrect.

Induration of the canal—pain on pressure at a particular point—and the possibility of taking the impression of an ulceration with the *porte empreinte*, or bougie armed with wax—have been cited as so many pathognomonic signs of the virulent form. It will hereafter be found, however, that these form but a probable diagnosis, as induration is by no means a constant characteristic of a virulent complaint, and any

* M. Puch, one of the surgeons of the Venereal Hospital, has stated to me that he can distinguish a mild from a virulent blennorrhagia by the period which elapses between the appearance of the discharge and the previous connexion. The observation of a great number of cases of a mild blennorrhagia proves that the usual period is from a few hours to as many days; on the contrary, in a virulent affection the interval between connexion and the first appearance of the discharge is from seven to fifteen days. That this is often the case no one will doubt, but, if alone relied on, it may lead to many errors in practice.

simple ulceration will give rise to pain, and an impression on the instrument may be occasioned by folds of the mucous membrane.

My own opinion is, that authors have had ample reason for separating blennorrhagia and its discharges into two forms, which they have called virulent and mild; but previous to M. Ricord's investigations, they had completely failed to state on what circumstances they depended, nor could they by any one symptom distinguish one from the other. As this is of great importance, I may be excused if I dwell somewhat longer on it, particularly as the practical application of facts which I shall hereafter mention depends upon the clear comprehension of this part of the subject.

In the early part of his career as a surgeon, M. Ricord undertook to show that the cause of a virulent blennorrhagia depended upon the complaint being complicated with a *chancre*. In women, more especially, he found that what was called a virulent gonorrhœa depended upon the existence of ulcerations, which could not be discovered by an examination of the external organs of generation, but which the use of the speculum clearly proved to exist; but did all ulcerations give rise to a virulent gonorrhœa? was the next question to be solved. At the time this eminent surgeon was investigating the subject, he often had occasion to treat the woman from whom some of his male patients had contracted the disease, and he found that there were various forms of ulcerations in the female agreeing in certain physical characters, and yet the secretion on their surface would sometimes cause a mild gonorrhœa; sometimes chancres on the glans penis and prepuce; sometimes virulent gonorrhœa. In vain did he try to distinguish these ulcerations by their physical characters. It was only by inoculation that he was enabled to prove why sores similar in appearance gave rise to such different consequences. Inoculation soon showed him that there may exist an ulceration of a *specific* character, which will be described in its proper place, and called chancre: but there may likewise exist ulcerations of a *non-specific* character, the result of an inflammatory state of the mucous membrane, which were frequently the consequence of a blennorrhagia. From this moment that which was previously doubtful became clear, and an inquiring and observing mind like his was not long in deciphering what had been the *opprobrium medicorum*. He came to the conclusion that appearances similar to those the speculum had proved to exist in the vagina, might exist in the urethra of the male, but which, from its small size, it was impossible to demonstrate. However, one opportunity of examining the urethra, followed soon after by a second, put him in possession of two cases, which he showed to the Academy of Medicine, in which chancres existed in the whole course of the urethra. (See wood-cut, Part II.) He thus discovered the key to this hitherto difficult question; and concluded that the only diagnosis between virulent and mild blennorrhagia is derived from inoculation. M. Ricord further proved by experiments, frequently repeated, of inoculating with the secretion of a simple mild blennorrhagia, that it will produce only a slight irritation, which subsides in a few hours: whereas, if the complaint be virulent, or, in other words, depends

upon, or is complicated with, a chancre which is concealed, or which can be brought into view by the speculum, the secretion introduced under the skin, in a similar way as in the former experiment, will produce a vesicle, pustule, and chancre, as seen in the drawing, Plate V. Figs. 1 and 2, *a*, *b*, and *c*. This, then, I call the *certain pathognomonic* diagnosis of a virulent blennorrhagia. A rational diagnosis may be drawn from the rosy, thin, serous or rusty colour of the discharge, provided such be present, as well as from an indurated spot in any point of the canal, accompanied with fixed pain, &c.

Should buboes follow, which on inoculation give rise to the characteristic pustule, it may be asserted confidently that the blennorrhagia is a virulent one. The occurrence of secondary symptoms, which only follow in a few cases, gives a further diagnosis of the same fact.

The surgeon must, however, usually depend upon the rational diagnosis, as inoculation cannot always be proposed, or he may find patients objecting to submit to it; he must, however, remember that it is but a rational one, and on such data be cautious how he risks his reputation by giving an opinion.

THE PROGNOSIS OF BLENNORRHAGIA.

The prognosis, with reference to the probable duration of the disease, will depend in a great measure on the mucous membrane which is the seat of the complaint. It is proved by experience, that when the conjunctiva or urethra is affected, a cure will not so readily ensue as when the prepuce or glans penis is attacked; and when the uterine surface suffers, the surgeon may feel assured that the complaint will resist treatment longer than when the vulva or vagina alone is implicated.

The same principle holds good in relation to the portion of the canal affected: it will be found that the disease will be more difficult to cure in proportion as it has gained the deeper portions, or such as are the furthest removed from the meatus; hence it is, that blennorrhagia of the neck of the uterus or the prostatic portion of the urethra are the affections most intractable to remedies.

If the blennorrhagia has existed but a short time, the cure will generally be rapid; chronic cases are more likely to resist our plans of treatment. An acute attack of the disease will probably be cured more speedily than the chronic form.

The prognosis formed by the surgeon will be much modified by the circumstance whether the patient has or has not previously suffered from blennorrhagia. If he has, the complaint will be probably less severe, but more rebellious to our means of treatment, particularly if there is a rheumatic diathesis in the patient.

It is evident that the occurrence of the various complications will considerably modify the prognosis. On this point I shall not insist, reminding my reader only that improper food or treatment are very liable to produce them, especially the formation of abscesses along or around the parts affected.

Under the head of prognosis, it may be as well to consider a few of the questions which patients put to surgeons, as it will enable me to

state some important facts, and attempt to remove some popular prejudices.

A patient will sometimes ask the surgeon if the treatment he is about to prescribe will give rise to a stricture or a swelled testicle. It is a very common prejudice to suppose that treatment will occasion one or both these complaints, and this, like many other popular errors, has taken its source in medical writings, where we find it stated that a blennorrhagia speedily cured will give rise to various other affections. I have already (p. 22) at some length combated these notions, and I can but repeat that no ill consequences are to be feared from the proper treatment. If I were disposed to be aphoristic, I might say that the ill consequences will be few, in proportion as the cure is speedy; and I defy any one to produce a case cured in twenty-four hours from its commencement, which has been followed by any ill consequences.

In addition to the questions relative to prognosis which the surgeon will be called upon to answer, he may have to reply to the following—Shall I, or shall I not, be subject to secondary symptoms? To answer this question, a surgeon must of course ascertain if the blennorrhagia be virulent or not. That is to say, if it be accompanied with chancre within the urethra or vagina. If it is a mild, uncomplicated affection, he may, with every assurance, quiet the fears of his patient.

If there be reason to suspect that the patient is suffering under a virulent form of the complaint, it does not even then necessarily follow that secondary symptoms will ensue; for if the chancre can be cured previously to the third day of its existence, and if it be unattended with induration, secondary symptoms will not probably arise. If, however, indurated chancre exist, too great caution cannot be used; tell your patient that the complaint is very serious, otherwise he may lay to the score of your treatment effects which really depend upon the presence of the chancre, or his own neglect.

Under the head of prognosis I must consider the greater or less probability of transmitting a blennorrhagia. On this score patients are usually very inquisitive, and surgeons should be particularly guarded in any opinion they may give. Whately asserted, that as long as a discharge was merely white, there was no fear of communicating it. Bell states, that if the secretion consists of mucus, we need entertain no fear on this head. Patients, however, ask, but will not always follow advice.

A gentleman had been ineffectually treated for gonorrhœa and gleet for a year; the discharge had been reduced to one drop only, seen in the morning. He was unable any longer to put off his nuptials, and with the sanction of the authorities in Manchester he married, and consulted me on his way to Paris six days after the ceremony, showing me the lint with a drop of creamy discharge, which had appeared since morning. He had no reason to think that marriage had increased the discharge, but had taken no medicine for some time, and came to me for an opinion as to what he was to do. By the advice of his surgeon he had always been in the habit of making water before intercourse with his wife. This plan I recommended him to continue

for some time, and to consult Ricord if anything occurred. I never saw this gentleman again, but I mention the case to show the position the surgeon may be placed in.

M. Ricord was accustomed to say, that when the secretion is reduced to a *thready mucus, which is transparent like vermicelli, contagion is not to be dreaded.*

Believing as I do that such a patient cannot infect those he may have connexion with, I yet cannot give my sanction to the act; for the irritation set up in the male as a consequence of sexual intercourse may in twelve hours change the pale mucus secretion into a purulent discharge, and this may become infectious to a very high degree.

As a general rule, we may say, as long as the secretion is purulent—a fact to be ascertained by simple inspection, or by means of the microscope, whatever may have been the duration of the disease—it is capable of causing a similar complaint in any mucous membrane with which it comes in contact.

The surgeon would do well to prohibit sexual intercourse in all such instances; it is the safest plan; but in private practice the advice will not be always attended to, and ill consequences do not invariably follow. It is surprising with what impunity a man may cohabit with a female at the time he is suffering from a more or less purulent discharge without her contracting the disease; this arises, as I have before stated, from the vagina being copiously supplied with a mucous secretion, so that foreign matter does not come directly in contact with the mucous membrane. Of all the patients who in great alarm have consulted me, and acknowledged, in a moment of intoxication, (while suffering from a *serous* discharge,) to have had connexion, I can scarcely recollect one who has communicated the disease to the female; but although she has escaped, the man usually suffers an accession of symptoms, the discharge in his urethra becomes purulent, and the probability of his infecting the female becomes much greater. Total abstinence from connexion should be strictly enjoined, for fear of worse consequences to both parties; or in the case of married men, during the existence of the discharge, the greatest caution and moderation should be recommended.

The prognosis in the case of a female suffering from a blennorrhagic discharge is very different from that in the case of the male. As long as she has any appearance of discharge, connexion should be strictly prohibited; the male urethra is not protected by any such coating of mucus, and we can never affirm that a man will not contract the disease from any serous discharge a female may be subject to.

TREATMENT OF BLENNORRHAGIA.

In studying the history of blennorrhagia, it is curious to see how its treatment has differed at various periods, and become modified by the opinions which medical men of the day have entertained on its nature and causes. When it was a prevalent idea that blennorrhagia depended upon, or consisted in, a loss of semen, such remedies were prescribed as surgeons supposed capable of checking *spermatorrhœa*.

At a later period, when humorism was in vogue, the discharge was supposed to consist of pus; and as it was thought advisable to chase

the bad humours from the body, care was taken not to check the discharge—the supposed outlet of various disorders. When we consider that medicine was but little advanced at this period, we are not surprised at this doctrine having kept its ground for a long time; but it is astonishing that similar prejudices are still entertained by many enlightened men, although they reject the ancient doctrines of humoral pathology. It is lamentable to find that many of the practitioners of the nineteenth century are not more advanced than were those of the fifteenth, and obstinately resist any line of treatment which has for its object the cutting short a disease, for fear of consequences which they cannot describe. “My treatment (says M. Ricord) is opposed completely to this opinion; I allow a discharge to continue no longer than I can help; it is never my intention to prolong the discharge; if it continue, it is in spite of my treatment, which has been ineffectual in checking it.”

When, about the time of Fernel, blennorrhagia was first arrayed under the class of syphilitic diseases and confounded with them, mercury of course was used in the treatment of both complaints, which were considered synonymous, and many and severe were the cases of salivation which resulted from such confusion.* This question even now is not without its practical bearing. The surgeon should remember that it will be useless to treat gonorrhœa at the same time that he is giving mercury for syphilis. If he attempt to do this, it will be found that the usual remedies avail nothing, and as will be shown hereafter, the one or other treatment must be postponed for the time being, as mercury is found to increase discharges from the mucous membrane.

Notwithstanding the distinctions which modern practitioners have introduced, and although it is generally believed that the two affections differ *in toto*, still at the present day many surgeons prescribe a course of mercury either during or after a blennorrhagia; some consider that small doses of mercury are advantageous as a species of alterative treatment. I shall have occasion to condemn this line of practice at a future period. (See page 49.)

Sydenham was in the habit of prescribing purgative medicine, and, from his statement, appears to have met with great success.

Tod and his school have much eulogized the use of diuretics, under the supposition that frequent micturition might cause the diseased humour to pass out of the system. Neither of these modes of treatment will be found applicable to private practice in the present day; but I think they may be employed with advantage at dispensaries and hospitals among out-patients, a class of persons who from inattention to the injunctions of the surgeon, it is impossible readily to

* I lately saw, at St. Bartholomew's Hospital, a case which must formerly have been very common. An ostler had suffered from gonorrhœa. Several weeks previous to coming to the institution, he went to a quack, living in the City, who recommended Leake's pills (composed of mercury), and an aperient occasionally; his mouth became sore, and his gonorrhœa got worse. This charlatan then recommended him to apply to a public institution. Under proper treatment he rapidly recovered. See also Sir A. Cooper's Lectures, page 500. He states it was the habit formerly, at Guy's Hospital, to rub in twenty-eight times, and to make the patient spit three pints a day.

cure, and it therefore becomes a question if it be not better to palliate symptoms gradually, than prescribe expensive drugs, which fail in these cases to have the desired effect, merely from the negligence of patients. I hope that some day it may occur to a reformer of hospital expenses to calculate the cost of a patient who has been ineffectually taking cubebs and copaiba for nine months or more. There is no means of estimating the mischief such remedies do the man's stomach, but it would not be difficult to calculate the value of the drugs thus thrown away on the routine practice too often pursued at some public institutions, which might be saved with great advantage to the funds of the institution, as well as to the bowels of the patient.

These various plans had successively held their sway in the medical world, when Bell proposed that a direct or local treatment should be resorted to. Injections became popular, and then fell into disuse; and it is now generally admitted that no one universal panacea can be recommended. Blennorrhagia, like all other diseases, will and must be treated according to the indications present.

Having attempted to establish the fact that at its commencement a blennorrhagia is a local affection, that the number and severity of the accidents which follow depend not only on the severity, but likewise on the duration of the complaint, I should state that it does not at once acquire its greatest severity, and moreover that it is not one of those affections which run a certain course, or last a certain time. Suppuration is not necessary to chase the peccant humours from the body, and in fact we have no reason whatever for allowing the discharge to continue longer than we can help.

I have further stated that the fear of driving the discharge into the system by a rapid cure, thereby causing certain accidents, is chimerical, as, the sooner the patient is cured, the less he is exposed to these accidents. It follows, then, that the surgeon should attempt by his treatment to prevent the development, and to diminish the intensity of the symptoms when he has been unable to check them at the onset, and in all cases to shorten the period of their duration as much as possible.

In imitation of the plan of treatment laid down by M. Ricord :

1st. I shall speak of the *prophylaxis*, or the preventive means.

2nd. Of the abortive* treatment.

3rd. Of the curative treatment.

PROPHYLAXIS, OR PREVENTIVE MEANS.—A consideration of the causes previously alluded to, renders it evident that the surgeon cannot always prevent the occurrence of the disease, as it may arise spontaneously under circumstances over which neither he nor his patient have control. Still he may, in a great number of cases, assist his patient in escaping, by avoiding the causes which give rise to it; or if the surgeon cannot persuade him to avoid them altogether, at least he may often be able to induce him to take such precautions as will render the occurrence of the disease less probable or less severe.

Such precautions, then, I now proceed to describe, as may be recommended to a person who is fearful of communicating the disease.

* By the term "abortive" treatment, I wish to express such means as cut short the disease before it can be completely established.

In the first rank stands excessive cleanliness. Judging from what I saw on my last visit to Paris, 1858, I should say that if French prostitutes do not contaminate the men who have connexion with them, it must arise from employing lotions before and after cohabitation. Injections must have a most beneficial effect in preventing the chances of infection.

If a female suffers from any discharge, she should at once communicate with her medical attendant, and learn the cause as well as submit to the treatment necessary; women in England, however, scarcely ever do this, and it is only after having too often unconsciously communicated the disease that they think it necessary to apply to a surgeon. Strict continence should then be recommended, as well as the usual remedies, which will be alluded to in a subsequent chapter.

I should not, I think, omit to call attention to the large class of women called prostitutes, as a material influence affecting the public health.

The day, I think, is approaching when it will be no longer possible for the philanthropist, or those entrusted with the care of public health, to conceal, or any longer to trifle with the fact, that in London and in all our large towns, exist a very numerous class of females who gain the whole or a large portion of their subsistence by a life of prostitution. For the purposes of this inquiry, it matters little if with the Bishop of Oxford we estimate their numbers in London alone at 80,000, or, as the late Magistrate Colquhoun did, at 50,000, or with the Police Commissioners, compute the recognised street-walkers, at 4000. The influence on society of such masses as these in a merely hygienic point of view, cannot for many years more escape public attention.* Medical men are the persons who, being more particularly acquainted with the evils of the system of total neglect, must point out its consequences, and it will then be for the public to decide whether they will desire its continuance. We may yet see the day when a board of health may not think it below their notice to point out the precautions to be taken by persons exposing themselves to the contagion of venereal poison, and to succour the unfortunate woman who is conscious that she is diseased, but cannot give up the streets, her only resource against starvation.

To resume; I would recommend surgeons who are consulted by women who *expose themselves to contagion*, to strongly urge upon them the necessity of using astringent or cooling washes once or twice a day, avoiding as much as possible connexion just before or just after

* This was written in 1850; but notwithstanding all our endeavours I regret to see how little improvement has taken place. Probably the student may, in the year 1960, if he consult the *Lancet* for February 25th, 1860, consider as a curiosity of medical literature the following extract from the discussion which ensued on the reading of a paper by the author, entitled "On the Rarity and Mildness of Syphilis among the Belgian Troops quartered at Brussels, as compared with its prevalence and severity amongst the Foot Guards in London."—"Mr. Solly (Surgeon to St. Thomas's Hospital,) far from considering syphilis an evil, regarded it, on the contrary, as a blessing, and believed that it was inflicted by the Almighty to act as a restraint upon the indulgence of evil passions. Could the disease be exterminated, which he hoped it could not, (marks of disapprobation,) fornication would ride rampant through the land."

the menstrual period, and submitting to occasional examination, as the only means of warding off uterine disease or detecting it when it commences.

The precautions to be taken by a healthy individual who exposes himself to the contagion, should consist in not prolonging the venereal act, and in making water immediately after it. The employment of injections into the urethra, I consider highly prejudicial ; simple ones serve the purpose only of pushing the contagious matter, if it exist, further down the canal, and irritating ones might occasion disease where none previously existed.

These, then, are the principal means which a surgeon can depend upon, or recommend, to remove the danger of contagion. The host of other specifics which charlatanism has invented, I shall not here stop to enumerate.

THE ABORTIVE TREATMENT.—It has been stated above, that one of our principal objects should be to shorten the period of the duration of blennorrhagia, and to check it at the outset. This we should attempt to effect in two ways, either by general, or by local and direct means. The following, or the abortive treatment, is, however, only applicable previous to the occurrence of the symptoms of acute inflammation, that is to say, during the first few days after the disease has declared itself.

The general means will consist in abstaining from all irritating or heating food ; not, however, that we prescribe an entire abstinence from meat ; a moderate use of nutritious diet should be recommended, as we believe general debility, of itself, tends greatly to produce a discharge from mucous membranes. Small quantities of fluids only should be taken, and warm baths or any relaxing agent should be strictly forbidden, unless there be reason to expect that the complaint depends upon an irritability of the skin. Sponging the surface with lukewarm water will answer all purposes of cleanliness. If there is reason to think that the disease depends on the irritating properties of the urine, alkalies or moderate quantities of fluid may be allowed, but great caution should be used in this.

In addition to these precautions, rest and quiet to the affected parts must be strongly recommended.

Internally the surgeon should prescribe the use of the anti-blennorrhagic remedies, which seem to possess a peculiar and specific action on the urine, such as cubebs, copaiba, and turpentine ; the doses in which they should be administered will be further alluded to, when mention is made of the particular forms of the complaint. These preparations should be given in sufficiently large doses, and at short intervals, so as to produce a sudden effect on the system. Various powerful quack medicines owe their efficacy as anti-blennorrhagics to this mode of action. The surgeon must not discontinue these remedies abruptly, but gradually diminish the dose ; by such means the cure will be found to be permanent.

Local baths are to be avoided, as they tend to increase rather than diminish the secretion. However, ice and cold lotions (provided no reaction follow) may be attended with benefit. Separation of the surfaces of the mucous membrane (when that is possible, as in gonor-

rhœa præputialis) will be among one of the direct means from which the surgeon may derive much advantage ; for, as we have previously observed, one diseased mucous surface infects the other, and augments the mischief. In addition to these means, great attention must be paid to cleanliness ; but the greatest dependence should be placed upon injections of various astringent or tonic substances, the nature and strength of which will be spoken of again under the head of the separate *regional* forms of blennorrhagia.

If, however, these means fail in curing the patient, or if the surgeon be consulted at a late period, when symptoms of acute inflammation are present, it will be in vain, and even dangerous, to pursue the treatment above spoken of, as it would tend only to augment the mischief.

THE CURATIVE TREATMENT.—The first stage, or the acute form, particularly if the inflammation be severe, may require general or local bleeding ; usually, however, leeches will suffice, care being taken that we do not apply them on those parts where the skin is doubled on itself and maintained by a loose cellular tissue, as occurs on the scrotum, eyelids, or penis : for although twenty cases might be cited in which no ill consequences have arisen, still the twenty-first is liable to be followed by gangrene or erysipelas ; and as the application of leeches to the surrounding parts—namely, the groin, perineum, or temples, is equally effectual—the surgeon should never expose his patient to the danger of these accidents. In virulent blennorrhagia, especial care should be taken that the leeches are not applied on a depending part of the body, otherwise, if the secretion falls, or comes in contact with the punctures, inoculation will result, and a distinct chancre will be formed on every leech-bite. I once saw a case of this kind at the Female Venereal Hospital, where thirty chancres existed on the perineum, in consequence of the application of thirty leeches, prescribed by a *sage femme*.

Leeches sometimes will produce an erythematous irritation and swelling of the neighbouring glands, therefore it will be well for the surgeon to apprise his patient that this is probable ; poultices and rest will, however, soon relieve the complication.

In my own practice for several years past I have not employed a leech or bled a patient, although I have met with some serious cases of inflammatory affection. As a substitute for bleeding, I enjoin now absolute rest, and cutting off the supplies. Purgatives and tartar emetic, together with diuretics, take the place of bleeding, cold lotions as a local application soothe the irritation, or a constant succession of warm baths effect the salutary purpose ; and, lastly, the local application, or general administration of opium, has an almost magical effect in bringing about resolution of the most serious forms of inflammation.

I need not say that when opium is given, precautions must be taken against constipation, and for this end, there is no medicine which acts at once so mildly and effectually as castor oil.

In the abortive treatment I have condemned the use of baths, but in this, the acute stage, baths are of the greatest benefit, when employed of such a temperature as is agreeable to the patient's feelings.

Provided no reaction comes on, the patient may continue in the bath for half or three-quarters of an hour. In other cases their use should be omitted. Local bathing is by no means so advantageous, tending as it does to cause congestion of the part.

Injections are in some cases useful ; in the vagina they wash away the secretions ; but in a narrow canal like the urethra they cause great irritation.

Diluent drinks may be freely employed, as they tend to render the secretions less irritating ; the composition of them must depend upon the taste of the patients, as it is the water they contain which is beneficial. The use of diaphoretics should be strictly forbidden, for reasons stated above.

The condition of the digestive organs should be attended to, as all mucous membranes sympathize with the stomach ; the extremes, therefore, of either constipation or diarrhoea must be avoided. In addition, the horizontal posture should be prescribed as well as strict attention to diet, avoiding everything that can excite, particularly beer, wine, spirits, coffee, asparagus, &c.

As the acute inflammatory symptoms subside, the antiphlogistic remedies must be, of course, discontinued. In their place the surgeon should prescribe those remedies which were recommended under the head of abortive treatment. Warm baths must be now laid aside ; the diet should be more nutritious, but not stimulating ; in addition, a general revulsive treatment, combined with a local or direct one, should be prescribed, for experience proves that although a cure may take place when either mode is employed singly, still, when conjointly used, they act more surely and effectually.

THE REVULSIVE GENERAL TREATMENT consists in the employment of copaiba, cubebs, turpentine, purgatives, astringents, tonics, iodine, and of the cutaneous revulsives I have mentioned.

As I shall have occasion to speak of these various remedies at a later period, in describing the treatment of the various regional forms of blennorrhagia, I shall now pass them over, reserving the description of the properties and doses of each until then. Having made these general remarks on blennorrhagia, I shall pursue the plan I have previously laid down, and describe seriatim the disease as it may occur in one or the other sex, and in the different mucous membranes.

CHAPTER II.

BLENNORRHAGIA IN THE MALE.

THE forms of blennorrhagia peculiar to the male are Balanitis and Gonorrhœa ; affections of very great importance to the surgeon, and which I shall successively describe at some length.

SECTION I.

BALANITIS.

SYNONYMOUS TERMS.—English writers have described the complaint here spoken of as balanitis, by the terms gonorrhœa præputialis, bastard clap, external gonorrhœa, &c. Of late years it has been generally known in France by the name of *balanite* or *balano-postite*, the equivalent form for which I shall employ in the following pages.

DEFINITION.—Balanitis consists in inflammation and patchy excoriation of the glans penis and lining of the prepuce, accompanied by a muco-purulent discharge. (See Plate I. Fig. 1.)

CAUSES.—The *predisposing* cause of balanitis is undoubtedly the existence of the prepuce, for we do not meet with the affection in persons who have been circumcised.

“The prepuce,” adds M. Ricord, in one of his clinical lectures, “is an appendix to the genital organs, the use and object of which I could never divine ; in place of being of use, it leads to a great deal of inconvenience, and the Jews have done well in circumcising their children, as it renders them free from one of the ills of humanity. The prepuce is a superfluous piece of skin and mucous membrane, which serves no other purpose than acting as a reservoir for the collection of dirt, particularly when individuals are inattentive to cleanliness.”*

The *exciting* cause can be usually traced to the application of some irritating secretion, such as menstrual fluid, blennorrhagic matter, &c. ; but although frequently of venereal origin, this affection often depends upon other causes than impure connexion. I have frequently occasion to see it in boys who are inattentive to cleanliness, and allow the secretions of the glandulæ odoriferæ to accumulate between the prepuce and glans.

At page 11 I have cited a severe case of the complaint, contracted by a married man from the acrid secretions of his wife many months advanced in pregnancy. We not unfrequently meet with the com-

* *Vide* Functions and Disorders of the Reproductive Organs, by W. Acton, p. 23.

plaint in persons who have suffered from abscesses close to the frænum, which have left little fistulæ, through which the urine exudes. In these last cases, the only method of permanent cure is treatment of the fistula, as I shall shortly have occasion to remark.

As I stated above, the disease may affect either the prepuce or glans, and this either in part only, or over the whole surface. The complaint is particularly likely to occur in the neighbourhood of the frænum.

The SYMPTOMS of the affection are the following : a slight itching, which is soon after succeeded by heat and pain, attended by an increased secretion of the glands, which becomes more or less purulent. The prepuce soon swells, in consequence of a tumefaction in the cellular tissue, which so largely enters into its composition, and this swelling may occur in a very short period. Not unfrequently an inflammatory or erysipelatous condition succeeds this cedematous state, which may be confined to the prepuce only.

Usually no pain is felt in making water, nor does any chordee exist ; in a few cases, however, when the urine passes over the inflamed prepuce, a scalding is felt, and in erection the glans becoming too large for the swollen parts around, a pain like that experienced in chordee may occur. In such cases it is very difficult, particularly when phymosis exists, to decide whether balanitis is accompanied with gonorrhœa or not.

In the more advanced form of the disease, on uncovering the glans penis, the whole of that organ is found bathed with purulent matter : if this be wiped away, the surface has a partially raw appearance, like a blistered surface, and the secretion will soon reappear. These erosions are irregular, as seen in the annexed Plate, and very red, standing well out in relief amidst the shreddy white edges.

Simple balanitis is usually acute in its progress, but it may become chronic. Its termination is commonly favourable ; however, gangrene sometimes ensues as well as erysipelas, more especially if the surgeon applies leeches on the diseased and cedematous prepuce.

COMPLICATIONS.—Balanitis is not always the simple affection I have here described ; in some instances *abscesses* may form in consequence of the collection of matter between the glans and prepuce, and the latter may become swollen, or having been naturally narrow, circumscribed inflammation of the cellular tissue of the prepuce may result, terminating in abscess ; in either case these collections of matter will point at the upper part of the penis, and gangrene will often attack the prepuce, and by destroying it, will leave the glans penis exposed, as seen in Plate VI., Fig. 3. Gangrene rarely commences at any other point than this, and may destroy the whole penis, or be limited to the prepuce, as was the case in the individual from whom the drawing referred to was taken. This tendency of the prepuce to become gangrenous at its upper part has been variously accounted for. Some suppose it to depend upon the greater number of vessels in this situation, but it more probably arises from the friction against the trousers to which it is subject in all the movements of the body.

A very frequent complication is *chancre*, which, when masked by a

narrow prepuce and purulent discharge, leads the surgeon to believe that the patient is suffering under simple balanitis.

Secondary symptoms may also become a complication. Thus the mucous tubercle, (delineated in Plate VII.,) occurring on the prepuce, which is already the seat of a balanitis, will increase the disease; it will likewise be one of the causes of it; hence we have what is called, improperly, a *syphilitic balanitis*, for this complication produces or exaggerates balanitis, not in virtue of any specific poison, but as a consequence of the secretion, which is very acrid. Eczema, particularly in old people, will constitute a complication, and like vegetations, will be more difficult to cure in proportion as the surgeon is unable to expose the glans.

Balanitis without any complication of chancre may cause a *bubo*; this, however, is rare, as we seldom find that buboes arising from this cause suppurate; they are merely sympathetic, and when they do suppurate, never give rise to virulent sores capable of being inoculated.

Secondary symptoms never arise as a consequence of simple balanitis. Such is the result of M. Ricord's researches on inoculation. I have never seen or heard of a case of simple balanitis which was followed by secondary symptoms.

M. Puch, one of the surgeons at the Venereal Hospital in Paris, considers (1840) that simple balanitis may produce a chancre, and thus induce secondary symptoms. He inoculated a patient affected with simple balanitis, unaccompanied by chancre, but in whom vegetations existed. The characteristic pustule was observed, and he had the kindness to show me the case, and concluded that simple balanitis without ulcerations may give rise to syphilis. This conclusion I cannot adopt, for the following reasons: he admits himself that it is an exceptional case to see the inoculation succeed; he has observed it in two cases. M. Ricord has never met with similar results; it is, therefore, natural that we should seek an explanation of it in some circumstance beyond a simple balanitis. I believe that many circumstances may explain this occurrence; the patient, before entering the hospital, had connexion, and as his prepuce was long, the syphilitic virus may easily be supposed to have remained within its folds without producing chancres, as the glans was covered with mucus and smegma; for we find that this virus does not produce its effect until it comes in contact with the mucous membrane or skin, or till an abrasion results, or it is introduced into a follicle. The virus may remain on the prepuce inert, provided there is a secretion which protects it, in the same way that it may be kept in glass tubes, and yet at the end of the eighth day produce a chancre. I believe, then, that the true explanation of those exceptional cases depends upon some such cause as the above.*

Phymosis consists of a narrowing of the foreskin, so as to prevent retraction of the prepuce, and is frequently a complication of balanitis. The surgeon should first bear in mind, that he ought not to operate on the prepuce unless urgent symptoms demand it, particularly if the

* During my late visit to Paris, October, 1859, M. Puch told me that he has now given up these views, and is fully convinced that simple balanitis is not an inoculable complaint.

phymosis be not habitual. Instead of slitting up the prepuce, lint wrapped round a probe may be carefully introduced between the glans and prepuce, so as to wipe away all secretion; and having gently drawn forward the prepuce, a stick of solid nitrate of silver may be introduced, and the parts quickly brushed over with the caustic—and the foreskin syringed out from time to time with warm water or astringent washes.

In other instances it will be well to syringe out the prepuce with warm water, and subsequently inject, by means of a glass syringe, a strong solution of nitrate of silver, made in the following proportions:—

R Argent. Nitrat. Crystall. 3 ss.
 Aquæ destill. 3 iij.
 M. ft. Inject. ter die applicand.

The immediate consequence is considerable augmentation of pain, which may last for half an hour, but on the following day the amendment is very marked. Baths, and injections containing opium are useful, but not so advantageous as cauterization: it is the best anti-phlogistic remedy in these cases with which I am acquainted.

As soon as the inflammatory symptoms have abated, and the surgeon has cured the balanitis, he may recommend the patient to have the phymosis remedied. I have frequently succeeded in doing this by placing pieces of thick lint between the glans and prepuce; little by little the foreskin is stretched, particularly if the parts are washed daily with a strong solution of tannin. In other instances, a cure may be slowly effected by introducing a sponge tent covered with wax; this will often succeed in dilating the prepuce. If, however, this fails I should recommend the

OPERATION FOR PHYMOSIS.—When the patient will submit, circumcision is the best means that can be adopted; all other plans are tedious, and more or less objectionable.

The plan I pursue now is as follows:—

The patient having taken chloroform, and being placed in a convenient position, the surgeon, without any traction of the skin of the prepuce, should trace with ink a circular mark, just in front of the glans penis, and following its direction.

A long needle, the point of which is covered with wax, may now be introduced between the glans and prepuce, and then passed through the latter, in front of the circular mark, and exactly in the mesial line. The mucous membrane and the skin of the prepuce are thus fixed by the needle, which may be allowed to remain. A pair of long dressing forceps are placed behind the needle in a longitudinal direction, and are entrusted to the care of an assistant. The operator, satisfying himself that the glans is just behind the forceps, should draw forward that portion of the prepuce which is in front of the forceps with his left hand, while, at the same time, he with the right divides it in the oblique direction of the forceps, which thus protects the glans, as shown in the annexed woodcut.

The arteries that may bleed must now be tied, or torsion employed; I prefer the latter plan. The edges of the prepuce may now be brought together, and kept in apposition by little silver clasps of wire called “*serre-fines*.”

The patient must be kept quiet, water-dressing applied round the penis, and camphor pills prescribed to prevent erection. On the following morning we usually observe infiltration of serum into the cellular tissue, but this is gradually absorbed. A complete cure may be expected from the tenth to the fifteenth day, although, where union by the first intention takes place, it may occur on the fourth or fifth.



OPERATION OF CIRCUMCISION.

It frequently, however, happens that the patient will not submit to circumcision, or there may be considerable induration of the cellular tissue of the penis, and yet an operation may be required, if phymosis have existed previous to the balanitis. In such a case as this a narrow knife, the point of which is protected with wax, should be passed between the glans and prepuce in the mesial line, and the point then thrust through the prepuce, and by drawing its blade towards the operator, the whole thickness of the prepuce will be divided. The result however is, that two flaps will be left, which will swell and become infiltrated every time the patient subsequently indulges in connexion; they must therefore be removed; and this is best done, after slitting up the prepuce, by re-introducing the point of the knife close to the frænum, and then seizing each flap with a pair of dressing forceps, slicing off the flaps in front of the blades of the instrument. Should hæmorrhage occur, a needle should be passed below the vessel, and a twisted suture employed, which will immediately stop the bleeding. The after-treatment is the same as in the former case. M. Bonnefont has proposed filling the prepuce with wadding, and then removing the foreskin with a knife. (See *Gazette des Hôpitaux*, 1856, p. 5.)

If the patient will submit to one incision only, it is better to slit up the prepuce close to the frænum; the subsequent deformity will be less, and a sort of apron only left, which is less liable to become infiltrated than when the incision is made in the upper part, at the

mesial line ; but in this last case, on cicatrization occurring, there will be a partial phymosis, which is nearly as annoying as the original complaint, and the deformity nearly as great. This partial operation should never be adopted unless the patient will submit to no other.

If the surgeon, however, be consulted at a later period, when gangrene is imminent, or has already commenced, the prepuce should be freely slit up in the upper portion, and in the mesial line, without delay, so as to expose the part ; and compresses of cold water, or solutions of opium, should be constantly applied.

The indications for cauterization, or for incision, are sometimes obscure. When, however, the discharge consists of thick pus, we should cauterize, and the patient thus preserves the prepuce, for in a few days he is able to uncover the glans. If there be a chancre, an incision is very prejudicial, as it most probably will inoculate the divided surface.

The indication for slitting up the prepuce consists in a discharge of ichorous matter, or when the skin has assumed a dark livid colour ; if the surgeon does not operate in these cases, nature herself will form an opening.

In cases of balanitis, the surgeon should be particularly cautious not to leave the glans uncovered, as inflammation and swelling may occur, and paraphymosis result.

Concretions of Hardened Smegma between the Glans and Prepuce may become another complication. In the last paragraph it was stated that the prepuce may be naturally long ; in some such instances only a little smegma is secreted, or when secreted it may pass away, but in other instances, the secretion goes on accumulating till, after years of neglect, it forms hard calcareous-looking bodies, closely impacted side by side all round the glans. Those who have not witnessed the affection can hardly believe that such formations could occur. The following is a good instance of this somewhat rare phenomenon :—

A young gentleman, twenty-five years of age, called on me saying, as he was about to marry, he was anxious to know if he was capable of discharging marital functions. After some preliminary questions, I desired him to show me the penis, and finding that his prepuce was unusually long, I asked him to uncover the glans, and as he found a difficulty in doing so, I assisted him. As the prepuce was withdrawn, flattened, white, cheesy-looking, and somewhat dice-shaped substances came successively into view, and by touching them with a probe, fell into a little box I had at hand, greatly to the surprise of the patient, who had no idea what they could be. I have seen one or two such cases, but their occurrence in the form and of the size above described is very rare ; in one case their consistence was much harder, and they were impacted closely one by the side of the other like figs in a drum. In the first instance cited they gave the patient no inconvenience, and unless accidentally discovered might have existed till death ; cleanliness or washing the parts with astringent lotions is the only treatment required.

Paraphymosis may become a complication of balanitis ; it usually

happens in the following way :—A boy or young man having a naturally tight prepuce draws it back with some difficulty ; a few minutes pass, when the patient on trying to replace the prepuce, finds it swollen and some pain coming on, and not knowing what to do, allows the glans penis to remain uncovered, and as a natural consequence the longer the prepuce is retracted, the severer the paraphymosis will be. If the surgeon is called in at this early stage, the treatment is simple enough. It is only necessary to place a piece of wet lint round the penis, which should be seized with the left hand, then with the thumb of the right hand the glans should be pressed firmly back, at the same time that the prepuce is drawn forward by the left hand.

If the patient delays calling in assistance until paraphymosis has existed some days, ulceration will not improbably have taken place in the fissures formed by the retraction of the foreskin. In some instances firm adhesions are noticed ; in such cases the forcible pushing back of the glans is impossible, and the knife must be employed, and incision should be made on the dorsum of the penis so as to divide the constricted parts through the entire thickness of the skin. Malgaigne recommends that, as there are adherent bands between the skin and the corpora cavernosa, a narrow buttoned knife be introduced on the flat between the integument and the corpora cavernosa in the whole extent, and an incision made, when reduction can be immediately obtained. On the following morning all swelling is gone, and the ulceration rapidly heals. (*L'Union Médicale*, 1856, p. 220.)

The DIAGNOSIS of balanitis is very easy, provided the surgeon can uncover the glans, and see in what state it is ; but when phymosis is present, the practitioner is often at a loss to know whether a simple balanitis exists, or if it be complicated with a gonorrhœa, chancres, or vegetations. In the second of these cases, an induration may often be felt on the prepuce, and, on interrogating the patient, it will be found that a chancre existed before the phymosis took place ; but if no induration exist, and if the patient have not examined the penis, our diagnosis will be very imperfect ; still one means is within our reach—it is that of inoculation, which will be fully treated of in the Second Part of this volume.

The PROGNOSIS will depend upon the complications present, for simple balanitis presents nothing unfavourable.

The TREATMENT of balanitis in uncomplicated cases is very simple. As before mentioned, it consists in drawing back the prepuce and washing the parts, then carefully drying them, and by means of dry lint, accurately placed between the glans and prepuce, separating the two surfaces. I have cured in twenty-four hours, by this plan alone, patients who have been applying black wash, zinc ointments, and the usual changes from ointments to washes during as many weeks. Isolation is the secret of cure, whereas moisture is the cause of the complaint. Having applied the lint, draw the prepuce over the glans, and remove the lint twice a-day, with the precautions above observed.

When a slight inflammatory condition of the parts exists, it will be well to pass a stick of caustic over them, simply to whiten the surface,

which should be previously dried by lint; and to have the affected parts washed twice daily with the following lotion:—

R. Acid. Tannici	.	.	.	.	iv. gr.
Aquæ destill.	.	.	.	.	℥ ij.
M. ft. lot.					

Having dried the glans and prepuce, fresh lint should be again employed, and the parts may, at the expiration of twenty-four hours, be again touched lightly with caustic, if the cure be not then complete.

When balanitis is complicated with chancre, of course we must employ the treatment which the latter complaint may require, and which will be described in the Second Part of this work.

It has been supposed that in such cases mercury should be given; but this is quite contrary to our present experience. The following letter to the *Medical Gazette*, December 7, 1849, will show the erroneous notions which have been entertained on this subject, as well as put my readers in possession of the epitome of my views on the employment of mercury.

"Sir,—My attention has just been called to the following extract from a lecture of Mr. Bransby Cooper in a recent number of your journal; and I have been asked by a former pupil of M. Ricord if that gentleman does, or ever did, entertain the opinions here expressed:—'If, then, it is found that the discharge continues obstinately, and that there are sores beneath the prepuce, it must be divided; and if small warty excrescences be perceived, the prepuce ought to be freely laid open. For such a case Ricord would inoculate the patient with some of the matter; and if a chancre were the result, he would proceed at once to administer mercury, upon the conviction that the disease was specific in character.' (*Med. Gaz.*, p. 872.)

"I should not have troubled you with the following refutation of the statement that 'if a chancre were the result he will proceed at once to administer mercury,' did I not find that some of the senior members of the profession in London entertain similar opinions to those of Mr. Cooper, and as such opinions are opposed to all the results of the important investigations M. Ricord has made on inoculation, I feel called upon to state, in as few words as possible, what M. Ricord really believes to be the object of inoculation, and of the truth of which daily observation in Paris and London has convinced me.

"In the first place, inoculation has settled many theoretical points, which previous to M. Ricord's investigations were believed by some and doubted by others. It has proved that gonorrhœa and syphilis are two distinct diseases. It has explained why a discharge from the urethra may be followed by secondary symptoms, in consequence of the existence of a chancre in the canal.

"In medico-legal inquiries it will often enable a surgeon unhesitatingly to decide upon a sore (situated in some suspicious place) being either an ulcer or a chancre, as in instances of intractable sores on the lip, nipple, or anus. It has already shown that true syphilitic sores will get well without mercury—this, previously to our knowledge of inoculation, it was impossible to prove, particularly as it had been

asserted that such sores were nothing but simple ulcers : inoculation, however, decided that they were chancres.

"These, then, are some of the practical benefits we derive from inoculation, and I hope I have mentioned enough instances to prove the value of the test. But when we inoculate a patient, and the characteristic pustule is produced, neither M. Ricord nor his pupils 'proceed at once to administer mercury:' indeed, we repudiate any such doctrine. On the contrary, as shown by our experiments, inoculation has thousands of times proved 'that although the disease is specific in character,' it can be cured, and is, under our treatment, entirely removed in the majority of cases without mercury. I may add, the giving or withholding mercury, after inoculation has produced the characteristic pustule, depends upon far different grounds from those Mr. Cooper supposes M. Ricord to act on. Daily observation on the treatment of others incontestably proves the danger of indiscriminately giving mercury. Experience would, indeed, have been thrown away upon us, did we, in the nineteenth century, continue to give mercury in this wholesale way. On the contrary, practice tells us we can cure the simple chancre locally, with water dressing ; the phagedenic and irritable ulcer with iron ; sloughing phagedena with opium : we thus reserve mercury almost exclusively for some forms of indurated chancres which still require the mineral. Instead, then, of being the mercurialists we are supposed, we prefer placing ourselves among the eclectic school ; neither altogether withholding mercury, as some have done, nor indiscriminately giving it, as was the case a few years ago in this country."

SECTION II.

GONORRHOEA, OR URETHRAL BLENNORRHAGIA.

THE next form of blennorrhagia I am about to describe, as it exists in the male, is the affection called *Gonorrhœa*, a complaint which has occupied the attention of many writers, but one concerning which, much still remains to be discovered. It is true that we have in this the nineteenth century a better knowledge than we before possessed of the pathology of the disease, and we have eradicated many a vulgar error which was entertained about the complaint ; but as to the discovery of a certain rapid cure, we are as far distant from it as ever. This, however, is not so surprising to the old practitioner as it is to the tyro, who does not always bear in mind the situation of the discharge, the frequency with which the disease occurs, the liability to relapse, together with the little attention a patient will pay to the complaint ; but, above all, the fact that the urine, loaded with all sorts of stimulating substances, must necessarily pass over the inflamed surfaces many times in the twenty-four hours.

CAUSES.—The causes of gonorrhœa have already been fully discussed at page 7 *et seq.*, under the general term *Blennorrhagia*. Some special circumstances affecting the urethral membrane alone require

further notice here. It may be mentioned that a relative disproportion between the genital organs of the male and female will be a cause of the development of gonorrhœa. I have reason to believe that, in many cases of rape, where the male is said to have diseased a little girl, the discharge she is suffering from does not depend upon gonorrhœa communicated by the male, but, in many instances, is caused by the violence offered to the parts in the act of intromission, and is not absolutely a proof that the male previously suffered from discharge, although in many instances this is known to be the case, as there exists an infamous notion among the lowest ruffians that connexion with virgins has the effect of relieving them from the discharge.* Whatever its origin, this vile idea will still, I fear, do much mischief before being eradicated, so deeply is it rooted in all parts of the world.†

Herpes may cause many of the symptoms of gonorrhœa. A patient came to me with a discharge, which had continued for some days. There were several patches of herpes præputialis on the penis. I prescribed a lead injection, and copaiba capsules. The injection caused intense pain, and he left it off in two days, and discontinued the capsules at the end of a week. The discharge, however, disappeared. I have no doubt that in this case, as in others I have seen, it arose from herpes along the course of the urethra.

I have already mentioned that uterine diseases in a wife may cause discharge in her husband. Cancer is one of these ailments. I lately met a gentleman, an old patient whom I had not attended for years, though formerly very subject to discharges from the urethra. He informed me that his wife had died, since I saw him, of cancer of the womb, and I have no doubt that from the secretion arising from that disease he must have contracted his complaint. Another case was that of a husband and wife, moving in a high position, who were both affected with discharges. The wife had a very suspicious cancerous ulcer on the os uteri running up the canal. The gentleman suffered from a watery discharge, which was difficult of cure, and very liable to recur. Indeed, the more I see of this kind of case, the more fully I am convinced that the cause of urethral discharges is even now but ill understood.

Where contagion is the cause of gonorrhœa, we believe the complaint to depend upon the secretion coming directly in contact with the mucous membrane of the urethra; judging from experience, although no experiments have been made on the subject, the contact of the matter need not be long continued for gonorrhœa to occur.

It is probable that the introduction of the gonorrhœal matter takes place previous to ejaculation, and the expulsive force with which the

* The importance of these facts cannot be too strongly impressed on all those medical men who are called upon to deal with cases of rape on young girls. Supposing the girl to be found suffering from discharge, it by no means necessarily follows that the man should suffer. Likewise, supposing the man to suffer from discharge, no one ought to take upon himself to say, from that fact alone, that the man was suffering previously from gonorrhœa.

† "Prostitution dans Alger," par M. Duchesne, page 107. He says, "Les Arabes se figurent qu'en cohabitant avec une negresse, on lui passe son mal en s'en delivrant."

semen issues often washes away the contagious matter ; for, unless such were the case, I am convinced that gonorrhœa would be still more common than it is.

During erection, and previous to ejaculation, the meatus has a great tendency to open ; the round form of the glans further promotes this tendency, as it is pressed laterally when passing the vagina, thus naturally separating the lips of the meatus. Hence a large penis and a wide meatus make the owner all the more susceptible to the disease.

Some writers, not content with this explanation, believe that gonorrhœa does not occur from direct contact of the pus, but suppose that absorption from the external part takes place, and that the secretion is directly carried into the glands of Morgagni, situated just within the fossa navicularis.

COURSE OF THE DISEASE.—On this subject hardly anything I could say would equal the description of it given by M. Ricord in one of his lectures, and reported by M. Melchior in the *Gazette des Hôpitaux* for 1847, p. 473 :—

“Gonorrhœa may be divided into phases or periods which succeed one another, provided the inflammation is not checked ; in the first period, the balanic region is alone affected ; inflammation then extends itself backwards, arriving at the spongy or bulbous portion ; in a short time it gains the membranous region, and reaches the prostatic portion, and sometimes the neck of the bladder.

“Hunter attributed virulent properties to gonorrhœa when it was seated in the balanic portion ; in his opinion the virulence of the disease completely ceased when the deeper structures were affected. This opinion which, according to our doctrine, might appear absurd, finds easily its explanation in facts ; we know that gonorrhœa is only virulent provided urethral chancre exists. Now, as the urethral chancre is nearly always seated in the balanic region, its secretion coming into contact with the mucous membrane which is behind, only irritates it without inoculating ; it is not then astonishing that Hunter, who was not acquainted with urethral chancre, believed in a virulent discharge from the balanic region, and in a non-specific discharge from the posterior part.

“Gonorrhœa commences generally from three to eight days after connexion ; its commencement is marked by a slight itching, which often escapes the attention of the patient ; a somewhat agreeable titillation and abnormal excitement of the genital organs follow : these symptoms soon change into real pain, which micturition increases ; both lips of the meatus become red and tumefied, the mucous membrane is everted, and the secretion drying at the opening of the urethra, glues together the two edges ; if these symptoms continue, the surface of the glans becomes red and inflamed. Patients cannot make water without experiencing in the fossa navicularis very severe scalding ; this pain may be occasioned by three causes—1st, the acrid condition of the urine ; 2nd, inflammatory narrowing of the canal ; 3rd, inflammatory state of the mucous membrane. It is only necessary to mention these causes to comprehend how they act ; pain, which until now has been intermittent, becomes continuous and

heavy ; it is spontaneous, and augmented by the weight of the clothes or pressure ; it is acute in proportion as the inflammation gains in depth, and has a tendency to pass to a phlegmonous condition. The secretion, which at first was clear or slightly opaque, becomes thick and more highly coloured ; the inguinal regions are slightly painful, sometimes becoming the seat of inflammatory buboe ; the glans then looks red and firm ; in the inferior part a hard cord is felt, which has sometimes been taken for a urethral chancre, but which is nothing more than the swollen canal of the urethra ; it is not uncommon to notice the occurrence of swollen lymphatic vessels, which may be traced as far as the inner side of the inguinal regions, where they terminate in the swollen glands. If the inflammation is not checked, it attacks the whole spongy portion of the canal. New symptoms now arise ; more or less tension of the urethra is felt, as well as pain in all that portion of the canal in front of the scrotum, and a feeling of inconvenience and suffering between the testicles, in the direction of the bulb. When the inflammatory swelling has gained the deeper portions of the canal, a new and more alarming symptom arises—namely, chordee. This symptom, which Hunter has described, is but the result of inflammatory swelling ; in fact, the walls of the canal having lost their elasticity, can no longer follow the increase of the corpora cavernosa in erection ; the penis is thus bent upon itself, and represents a bow, the string of which would be the canal ; during erection pain seems to concentrate itself in the least moveable part of the urethra, where all the elements of inflammation are present ; namely, at the angle formed by the penis and scrotum. Chordee then is a sign of inflammation of the spongy portion of the urethra. It is rare to find urethral inflammation stop at the bulb, it generally reaches the membranous portion ; the patient then feels inconvenience and sometimes very severe pain in the perineum. During erection, complaint is made of a dragging sensation behind the scrotum, as the cord does not extend beyond that ; the pain caused by erection is not diminished by drawing down the penis.*

“Pressure on the perineum augments the pain, and sometimes renders it insupportable. When inflammation has gained the prostatic region, new symptoms announce its progress, the perineal pain augments, there is a great feeling of suffering ; if patients wish to sit down or cross their legs, they are prevented by the acute pain ;

* CHORDEE AND ERECTION.—John Hunter says,—“The chordee appears to be inflammatory in some cases, and spasmodic in others. We shall treat first of the inflammatory chordee. When the inflammation is not confined merely to the surface of the urethra and its glands, but goes deeper, and affects the reticular membrane, it produces such an extravasation of coagulable lymph as in the adhesive inflammation, which, uniting the cells together, destroys the power of distension of the corpus spongiosum urethræ, and makes it unequal in this respect to the corpora cavernosa penis, and therefore a curvature takes place during erection, which is called chordee. The curvature is generally in the lower part of the penis, arising from the cells of the corpus spongiosum urethræ, having the sides united by adhesion. Besides this effect of inflammation, when the chordee is violent, the inner membrane is, I suppose, so much on the stretch as to be in some degree torn, which frequently causes a profuse bleeding from the urethra that often relieves the patient, and even sometimes cures him. As chordee arises from a greater degree of inflammation than common, it is an effect which may, and often does, remain when all infection is gone, being merely a consequence of the adhesive inflammation. (“On the Venereal,” p. 49, 4th edition.)

the passage of the urine produces scalding, commencing at the posterior portion of the canal ; the stream is very small, and the direction may be altered as in stricture. The testicles now become painful, the cremasters are affected with sympathetic vermicular movements, constipation comes on, and at this period the neck of the bladder often becomes affected. The desire of making water is more frequent, amounting almost to incontinence ; pain, caused by passing water, is now very intense, and after the bladder has been emptied the feeling of a desire to make water continues, which is augmented by a very painful vesical tenesmus ; the last drops of urine which pass under these contractions are thick, milky, and sometimes contain blood. The blood and mucus are pressed out of the follicles of the prostate during the last moments of micturition ; sometimes these last drops consist of a discharge of blood or pus. Most frequently gonorrhœa stops at the neck of the bladder ; nevertheless, it sometimes continues its course, and may produce inflammation of the bladder itself, and assume the catarrhal or phlegmonous form. In these very rare cases, inflammation may extend itself along the ureters to the kidneys, producing nephritic blennorrhagia. This disease is far, however, from being so common as some authors suppose, who have mistaken pain caused by cubebs or copaiba for blennorrhagic nephritis. These lumbar pains, although sometimes very violent, disappear in a few days, provided the medicines which have caused them are discontinued. The secretion does not contain vibrions. When gonorrhœa has reached its highest point, it remains in that state for some days and then subsides ; this is known by a diminution of pain and by the discharge becoming clearer and more limpid ; nevertheless chordee may continue, for rigidity of the tissue does not all at once disappear. It is rare for the disease to be completely cured ; most frequently it becomes chronic, pain altogether disappearing, the mucopurulent discharge, which is called gleet, remaining. This is only apparent in the mornings, in consequence of the mucus having accumulated during sleep. Some patients arrive at this last period gradually, but more frequently the inflammation declines, relapses only occurring in consequence of the patient's indiscretions. In relapse coming on from sexual intercourse, the disease does not pass through the phases we have described, but becomes at once again purulent on the morning following connexion ; these relapses have been called blennorrhagia by repetition."

The COMPLICATIONS which may occur are numerous.

M. Ricord continues—"Let us now review the accidents which may complicate the disease I have just attempted to describe.

"1. *Inflammation of the Lymphatic Glands*.—This happens rarely except when the balanic portion is affected. Moreover, it is a rare accident, resolution occurring in a few days under ordinary treatment.

"2. *Febrile Reaction*.—Urethritis occasions sometimes febrile reaction. This febrile state may occasionally take on an intermittent type. It is, however, when the inflammation has gained the neck of the bladder, that these general symptoms manifest themselves. It is very important to recognise their source, so as not to expose the patient to superfluous treatment.

"3. *Dysuria*.—Dysuria, which may be considered a symptom com-

pletely identified with gonorrhœa, may become so intense that it constitutes a real complication ; retention of urine which may accompany it is sometimes the result of spasm of the urethra. This happens when inflammation is seated in the musculo-membranous portion. In such cases as these the bladder may be reached by a large bougie, and nevertheless the patient be unable to make water without recourse to the catheter.

“ Retention of urine may also be the result of inflammatory swelling of the walls of the canal, and in all its regions indiscriminately ; but the swelling occurs in spots, for here, as in phlegmonous erysipelas, inflammation concentrates itself in certain isolated points.

“ 4. *Abscess*.—Urethral abscesses consequent on blennorrhagia are not uncommon. They are frequently seated on each side of the frænum, or towards the point which corresponds with the peno-scrotal angle. We meet with them sometimes in the intermediate portions. Behind the bulb the inflammation readily gains the glands of Cowper. It is from this point that the inconveniences and the perineal pain arise, symptoms characteristic of mucitis, which is situated at the membranous region. Abscess in Cowper's glands is so far remarkable that it is situated at the side of the raphe ; one gland alone may be attacked, as may be witnessed in the vulval glands, or when one testicle becomes affected as a consequence of gonorrhœa. When the inflammation has passed beyond the membranous portion, it may occasion inflammation of the prostate, or of the epididymis, rarely, however, of the body of the testis.

“ Before commencing the history of these complications, let us return for an instant to abscesses. When they happen in the phlegmonous period of blennorrhagia, they are the consequence of the propagation of the urethral inflammation to the surrounding cellular tissue ; such are extra-urethral abscesses. The pus which they contain has a tendency to make its way to the mucous or to the cutaneous surface. If left to themselves, they have a great tendency to open into the urethra. This accidental opening constitutes an internal blind fistula ; the urine which passes into the pouch acts as an irritating body causing ulceration, and thinning the walls from within outwards, causes a communication between the cutaneous and mucous surfaces. The fistula is then complete, and gives ready passage to the urine. These fistulæ occur frequently in that portion of the urethra which is in front of the scrotum, where the structures are soft and very moveable. This facility of movement is most unfavourable for cure. It is necessary, when a surgeon has satisfied himself of the existence of these abscesses, to open them early, in order to prevent ulceration of the urethral mucous membrane. We shall return again to the treatment these complications require.*

“ 5. *Inflammation of the Prostate*.—This is a rare complication, which depends either on a severe inflammatory attack, or on faulty

* Although it may be true, as M. Ricord says, that in acute phlegmonous abscess, a free opening may be made for the pus by the lancet, in the more chronic cases, and these are by far the most numerous, the passage of a bougie will most readily cure the fistulous opening and relieve the symptoms. (See chapter on Fistulous Openings.)

treatment. All the symptoms become aggravated. There is an increase of perineal pain, with throbbing, difficult and painful micturition, retention of urine, constipation, and severe pain when the patient goes to stool. If he attempts to sit down or cross his legs, the pain becomes more intense. It is stated that one of the symptoms of the complaint consists in the existence of a depression on the fæcal matter formed by the impression of the swollen prostate projecting into the rectum ; but as this depression forms at the moment that a consistent fæcal mass passes on a level with the prostate, we can easily conceive that it would be obliterated, as is the case when fæces pass the anus, which is much narrower than that portion of the rectum which corresponds with the prostate. The finger, introduced by the rectum, may be of great assistance in the diagnosis, and may often satisfy the surgeon as to the degree of swelling of the prostate and its fluctuation, provided the organ contains pus. When one of its lobes, or a part of a lobe, alone participates in the inflammation, the swelling will be irregular. Sometimes the inflammation passes by this organ in order to attack the vesiculæ seminales ; the swelling is then at a greater distance from the median line, the generative function is increased in activity, and the patient is tormented by very painful nocturnal emissions.* It is important to establish these distinctions, for at this period the vesiculæ seminales present a sense of tension which might be taken for fluctuation. It is easy to conceive the danger which would result from puncturing these organs.

Inflammation of the prostate and vesiculæ seminales is followed by very severe local symptoms, but is not always accompanied by general reaction. Sometimes, however, vomiting, constipation, meteorism, and other nervous symptoms occur, as well as fever. Inflammation may spread along the sub-peritoneal cellular tissue, to gain the peritoneum. Abscesses of the prostate may open into the rectum ; and it is generally during defæcation that a discharge of pus takes place. In the larger proportion of cases the purulent abscess opens into the urethra or bladder in front of or behind the neck of that organ. If it opens into the bladder, pus escapes only when the patient makes water ; if into the urethra, the matter escapes in a jet at the moment of its spontaneous opening, and at the intervals between making water. Both these results may be followed by urinary fistulæ. The opening of the abscess into the rectum does not give rise to this complication. We shall see, in speaking of treatment, that it is preferable to give exit to the suppuration before an abscess is far advanced ; but this will be fully treated of under the head of Affections of the Prostate Gland.

“ 6. *Rupture of the Canal.*—It is in gonorrhœa, complicated with chordee, that we observe this accident. It may be spontaneous, and happen during erection or ejaculation, but frequently it is during connexion that rupture takes place ; more frequently still it is caused by the patient forcibly rupturing the supposed cord formed in the urethra during erections. It is most frequently to herbalists that

* It must not, however, be imagined that frequent emissions depend invariably upon inflammation of the vesiculæ seminales ; these may occur without any affection of those organs, in consequence of the local irritation.

these patients address themselves, when anxious to submit to such an operation. As a consequence of the rupture of the urethra a discharge of blood takes place, sometimes very abundant. This answers the purpose of local bleeding, and frequently relieves the patient, provided it is not necessary to employ steps to check the bleeding, and thus augment the irritation. The operation, even if successful, is however not unattended with danger. Chordee, it is true, disappears; but we have reason to dread the most severe consequences, viz., infiltration of urine and urinary fistulæ.

"7. *Induration of the Corpora Cavernosa*.—This is a disease the study of which has been much neglected. Inflammation of the mucous membrane may pass to the cavernous tissue and deposit in the areolæ of this structure plastic lymph. A true indurated knot, preventing erection, a symptom analogous to that of chordee, may arise. In fact, during erection, the corpora cavernosa may become dilated on all points except those thus indurated; they are held there, bound down on the side of the induration, presenting a curve on this point. If the plastic knot is on the back of the corpora cavernosa, the penis during erection will present a dorsal concavity, the glans penis being turned towards the pubis. If this indurated kernel is situated at the superior part, the glans will be curved towards the perineum, and the curve will exist always on the side of the induration; but if the whole thickness of the corpora cavernosa is implicated, that portion which is behind the plastic kernel alone becomes erect, that which is in front remains moveable and soft, like the free arm of a flail. (See p. 89.) This affection is not painful; and it is only during erection that patients are aware of its existence; nevertheless it is very inconvenient. If the swelling is the result of recent inflammation, it may be treated with success, and we may be able to prevent those indurations forming; but if the plastic organization is complete, all our remedies are useless, provided the complaint does not depend on a tertiary syphilitic affection. Induration of the corpora cavernosa is not, then, always the result of gonorrhœa; it may depend upon other causes. All traumatic causes, such as wounds, sudden twisting of the organ during a state of turgescence, and cavernous apoplexy, coming on under the same conditions, may give rise to the complaint. We have above spoken of tertiary syphilis; it is on this last variety that our therapeutic means have most influence."

Chancre.—Is one of the complications of gonorrhœa which M. Ricord has the entire credit of discovering. Before he commenced his investigations on the inoculation of syphilis, the distinctions between gonorrhœa and syphilis were very obscure. The experiments of M. Ricord have now shown, that in some cases of supposed simple gonorrhœa the discharge depends upon the existence of a chancre just within the meatus, and which very often can be brought into view by simply opening the lips of the meatus (see Plate V. Fig. 5); in other cases a hardness may be felt within the urethra, but the sore is too far down the canal to be visible. In a woodcut, to be found in the Second Part of this work, the ulceration is shown in the deeper portions of the urethra, which have been laid open. I merely notice this important complication here; it will be fully treated of under

the head of Urethral Chancre, in the subsequent part of this work, to which I must refer my readers.

The same observation may be made on *Blennorrhagic Affections of the Eye and Testicle ; Gonorrhœal Rheumatism ; and Strictures.*

In the above description of the *course, termination, and complications* of gonorrhœa, I have thought it necessary to describe what is possible to occur ; but, of course, hardly any one ever saw all these results in any one case. It is, however, noticeable that in some rare constitutions one complication follows the other in a most singular manner. No sooner is one set of symptoms relieved than others arise, until the patient has suffered from nearly all the complications possible.

THE DIAGNOSIS OF GONORRHOEA.—Every tyro in medicine will at once distinguish what he calls a clap, by means of the symptoms above described ; but such a person may not be aware that a surgeon experiences occasional difficulty in deciding at once whether a man is suffering under a gonorrhœa or not, if traces of the affection are absent at the moment of being consulted, if the lips of the urethra are uninfamed, and if the patient is anxious to conceal the disease.

I have reason to believe that soldiers are very clever in this deception, and display great ingenuity in passing the weekly examinations to which they are submitted, although the army surgeons watch carefully for the incipient stages of gonorrhœa.

Cases similar to the following are occasionally met with : a surgeon is called on by a magistrate to give an opinion whether or not a prisoner, said to have violated a girl, is labouring under gonorrhœa. The accused presents no swelling of the lips of the meatus ; on pressure, no discharge comes from the urethra, and there exists no traces of any secretion on the shirt. When interrogated, he probably denies having made water for several hours previously to the examination. If any suspicion exists, he must be ordered to pass his urine at the time in a test tube, when the discharge will be at once evident, floating in the turbid-looking water.

During the last few years it has been my practice in every acute case of gonorrhœa to desire the patient to make water in my presence into a glass tube. I allow the water to stand till cool ; if the urine deposits much mucus, which has more or less a clear jelly-like appearance, I consider it a sign of irritability of the neck of the bladder, and, in such cases, inform the patient that I cannot absolutely prevent the occurrence of swelled testicles, and I at once take precautions against the occurrence of complications which need seldom or ever occur, although very likely to do so without proper attention.

The **PROGNOSIS** must be drawn from the general and local symptoms. It is unnecessary for me to add anything here to what I have said above on this subject.

TREATMENT OF INCIPIENT GONORRHOEA.—It was formerly my belief, as I have stated in previous editions, that an attack of gonorrhœa could be almost invariably cut short at its very commencement by strong injections of nitrate of silver. From experience, I am now

convinced that though this may be so in a certain number of cases, it is a practice which should by no means be universally adopted. I believe that many cases do not, when so treated, recover as rapidly as they might.

I will give a case as illustrative of the method I recommend in the incipient stages.

A foreign nobleman called on me in great alarm. Ten days before he had had connexion while staying at a country house, hunting, shooting, and living high. A few hours before calling on me he had noticed an itching in the glans, and thought he observed a discharge. Nothing was to be detected at the meatus. On his making water into a test tube, the slightest trace of epithelial scales could be seen. I gave him a purgative, some alterative mixture, and told him carefully to avoid wine and violent exercise, and to return on the first appearance of any discharge. He never came back, and I have no doubt that the simple measures I took prevented the development of what probably was gonorrhœa in its incipient stage.

My method, then, at present, of treating the really incipient stage of gonorrhœa is this :—

Before pain, swelling, or abundant discharge have made their appearance, I ask the patient if he will or can abstain from malt liquors, wine, spirits, and coffee, as well as from violent exercise. If he promise to do so and to follow my directions, I can generally promise him a speedy cure. If the bowels be confined, I order some simple aperient medicine, and strictly forbid him saline draughts, fried fish, salt meat, made dishes, pastry, and cheese, but allow him to eat boiled fish, plain roast and boiled meat, with some simple invalid puddings. The positive remedy I generally employ in these incipient cases are copaiba capsules. I order the capsules to be taken three times a day, one after each meal, by this means the patient seldom suffers from eructations, particularly if he takes those capsules which are now made by enveloping the copaiba in a membrane, a plan far preferable to that of covering the nauseous oil with gelatine. In addition to this, I order my patient to inject night and morning into the urethra one syringe-full of lead injection composed of: *Liquor Plumbi Diacetatis* ℥j to *Aqua destill.* ℥j. Under this treatment the discharge gradually abates, and by degrees I discontinue the injection, and gradually leave off the general treatment, forbidding, however, the use of malt liquors, spirits, or coffee, and enjoining strict continence for some time. It is full ten days before I allow my patient to return to his ordinary mode of living. This plan of treatment is usually very successful, and depends, I believe, on attention to a number of petty details which it might appear puerile to mention. The young surgeon commencing practice will, however, soon find it to his interest to attend to these directions, for he will learn that if a patient is not rapidly cured of the complaint, confidence is lost, and there will be no chance of compliance with the restrictions necessary to recovery.

Copaiba.—As to the nature and effects of this remedy, Mr. Redwood says :—

“The substance called Balsam of Copaiba is an oleo-resinous exuda-

tion, obtained from several species of the genus *Copaifera*, by making incisions into the trunks of the trees. It possesses most of the chemical characters of common turpentine. By distillation, or saponification, it may be resolved into a volatile oil and a hard resin. These exist in very different proportions in different samples of copaiba, depending, probably, upon the species of *Copaifera* from which it has been obtained, the soil and climate in which the trees have grown, and the length of time during which the copaiba has been kept. I have found the quantity of volatile oil to be twice as great in some samples as in others, and to this difference is chiefly to be ascribed the dissimilar action of the tests upon it. There is probably no simple test that could with any satisfaction be applied for the detection of impurities in a substance which is itself subject to such great variations in composition.

"The only method that appears to me to be at all satisfactory, of examining a sample of copaiba, with the view of estimating its purity and value as a therapeutic agent, is, first, to resolve it into its proximate constituents, and then to examine these separately, with reference to their physical and chemical characters. The volatile oil is generally considered to be the principal, if not the only constituent of copaiba, which possesses any medicinal activity. This may be separated by distilling the copaiba with water, and its physical characters are so well marked, that it is difficult to conceive an adulteration that would not be readily detected. The resin would of course be at the same time separated by the above process of distillation, and the consistence and other characters of this part of the constituents of the copaiba will afford the best means of judging of the presence or absence of any non-volatile impurities.

"The proportion of volatile oil in different specimens of copaiba met with in commerce, is in some cases as low as 30, in others as high as 60, per cent. The specimens No. 1 and No. 2, alluded to in the foregoing experiments, contain nearly 60 per cent. of volatile oil; they are, therefore, unusually rich in the most active constituent of the copaiba. This volatile oil has the same ultimate composition as oil of turpentine, with which it closely coincides in the action produced by most chemical agents; but its taste, smell, and other physical characters, afford means of distinguishing it from that or any other substance with which it is likely to be mixed.

"The proportions of resin in different specimens of copaiba also vary to about the same extent as those of the volatile oil, the quantity being greatest where the quantity of oil is smallest, and *vice versa*. The resinous part of copaiba differs but little from common resin, obtained from turpentine. It is considered to possess but little medicinal activity, probably not more than common resin." (*Pharmaceutical Journal*, 1846, p. 13.)

No one can, in the present day, doubt that copaiba is one of the most valuable remedies we possess for the cure of gonorrhoea. Instead, however, of giving it in mixture, the modern surgeon administers the balsam in capsules, and as perhaps the following short article, which I published in the *Pharmaceutical Journal* for May, 1846, may interest some of my readers, I shall here insert it,

"The best modern method of giving nauseous liquids is in the form of

"*Capsules*.—Of these I find no end of varieties; but I fear the majority of the makers of such useful articles have not a very clear idea of the objects sought to be attained. Need I say, that it is of the greatest importance to employ genuine copaiba! The next important point, is to obtain a capsule of a certain definite size, so that we may know what dose the patient is taking, which the surgeon is generally unable to do. Another circumstance to which the manufacturer gives but little attention, is the thickness of the capsule. I would recommend the chemist to reject all samples that are not an eighth of an inch thick. In many instances I have known the capsule burst in the effort of swallowing, or dissolve as soon as it is in the stomach. An improvement has lately been introduced, by Messrs. Evans and Lescher, by enclosing copaiba in membrane, thus obviating many of the objections to all gelatine capsules. I am told that these membranous capsules are in the hands of respectable parties, who make a point of filling them with genuine copaiba.* I would suggest, however, to the patentees to increase the size and make them uniform, or the surgeon will return to the gelatine capsules, which, when properly manufactured, answer the purpose.

"The chemist should, in the selection of his capsules, take particular care that no one leaks, or the odour of the oil will be rapidly communicated to the others, and our object in giving copaiba in this way, frustrated. The patient should be told, likewise, to take his capsules after meals. By this means the gelatine, or membrane, will not immediately be acted on by the gastric juice, and those unpleasant consequences of taking copaiba, eructations, will not be experienced. Many persons will tell you they are unable to take pills, and feel convinced they will be unable to swallow capsules. Recommend such sceptics to take about a dessert-spoonful of water in their mouth, and then place the capsule on the back of the tongue, when the whole will be swallowed without difficulty; whereas, if the capsule be placed on the tongue, and water be taken, the patient will often swallow the water, but the capsule will remain, and produce convulsive action of the pharynx. Given in this way, it is singular how soon the medicine will act, and effect the purpose we have in view; and it is no less remarkable that the stomach becomes tolerant of the medicine; a patient has not that tell-tale face so often characteristic of one taking nauseous medicine."

During the time a patient is taking capsules, the surgeon should desire him to take moderate quantities of fluids, and to make water as seldom as possible; by this means the urine passed will contain a large proportion of the active principle of these specifics, which, while traversing the canal, seem to exert their peculiar action on the mucous membrane. One or two capsules, taken three times a day, will usually suffice if these directions are followed.

* During a late visit to the Paris hospitals (October, 1859) I found that these capsules, although of French origin, have fallen into disfavour in consequence of the belief that they pass through the intestines unchanged. Certainly in some instances they have appeared most inefficacious, the discharge continuing as before, and the urine not smelling of the oil. In such cases I should advise the patient at once to have recourse to those capsules that are made of gelatine or gluten.

Direct Anti-Blennorrhagic Action.—Copaiba, when carried into the circulating system, is supposed to undergo elaboration by means of which it acquires new properties. The urine of persons taking the remedy acquires a particular odour easily recognised. It is this principle contained in the urine which modifies the affected surfaces. Ricord says :—

“We have had occasion to treat gonorrhœa in patients who suffer under urethral fistula at two inches, or two and a half inches from the meatus. In one of these cases blennorrhagia occurred in the vesical portion of the canal, but it spread itself forwards to the balanic region. The use of copaiba caused the disappearance of the discharge in that portion of the urethra situated behind the fistula—viz. that which was under the influence of the urine. But the discharge from the anterior portion of the fistula—namely, that portion of the canal which did not come in contact with the urine—persisted. Injections caused its disappearance.

“Another patient, affected with a fistula in the same region, was able to make water through the meatus, by lowering the penis so as to bring the edges of the fistula in contact, but on raising the organ the fistula became open, and allowed the passage of all the fluid; this patient came under my care on account of a blennorrhagia, which occupied the whole length of the urethra, and without any injury to him we profited by his affection to clear up our doubts on the mode of action of copaiba. After giving him copaiba, we desired him to evacuate the whole of the urine by the fistula; at the end of some days the discharge from that portion of the canal placed behind the fistula had disappeared, but it continued in the portion in front of this fistula.

“The use of copaiba was continued, and the patient desired to allow the water to pass all along the canal, as he made water, in fact, by the meatus, the discharge from the spongy portion of the urethra disappeared like the other.

“These facts are sufficient to prove the special action of copaiba. Starting from this point, persons have attempted to cure blennorrhagia by bringing copaiba in contact with the affected mucous membranes; but the agent thus applied never succeeds, and has the inconvenience of producing much irritation. Copaiba may be taken in three ways. 1st. By direct application, but this means of administering it has been abandoned. 2nd. Through the mouth, or 3rd. By the rectum.

“*Inconveniences produced by Copaiba.*—Very frequently copaiba produces vomiting as well as eructations, which depends partly on a repugnance to the medicine, and partly on gastric irritation. Sometimes it produces diarrhœa, caused either by intolerance of the medicine or by irritation; in fact, it may give rise to enteritis. Vomiting is an action unattended with any good. Diarrhœa, on the contrary, may produce benefit. Copaiba acts rarely on the nervous system, nevertheless we occasionally observe cerebral congestion, which obliges us to suspend the remedy. Taking copaiba may occasion irritation of the skin, which may produce the different exanthemata. It is principally during the autumn and the spring that these eruptions appear, and generally after the first doses of the balsam.

“The most common form is roseola, lichen urticaria, and some-

times urticaria. We have likewise observed eczema and the different varieties of erythema, but roseola is the most common form; its appearance is preceded and followed by itching; the spots, either scattered or grouped together in certain points, are of the colour of bright wine; the eruption may be general and almost instantaneous, and may be seated on any part of the body, although it occurs around the articulations, and always on the extensor muscles. It frequently arises on the side of the ear and behind the neck; it is never followed by fever unless accompanied with the condition which may of itself have produced a febrile movement. Should a surgeon have forgotten these characters, there is a pathognomonic one—namely, cure of the disease as soon as the remedy is left off. The eruption disappears from the first to the eighth day from that on which we leave off the copaiba; this circumstance alone ought to enable the surgeon to distinguish this eruption from syphilitic roseola, with which it is so often confounded.

“Copaiba may, likewise, produce a symptom which has been wrongly interpreted, or rather confounded with complications of urethral blennorrhagia. Under its influence the kidneys may become the seat of lumbar pain, similar to what a blow would produce. Some surgeons have considered this as a symptom of renal blennorrhagia. This complication, which, in reality, is very rare, would, under such circumstances, be much more frequent, and would be a very grave error, although one or two days would dissipate our doubts; for by leaving off the copaiba the renal pain disappears, and we should thus cure the so-called renal blennorrhagia, merely by suspending the copaiba.” (*Gazette des Hôpitaux*, 1847, p. 536.)

I would somewhat soften down this alarming array of consequences, said to be produced by copaiba, all of which I have seen arise, but only in exceptional cases. In private practice the worst ordinary consequence I know is simple inefficiency. In certain persons, and when the discharge is abundant, and the inflammatory symptoms run somewhat high, the oil of copaiba appears to exert no influence whatever on the affection even after some days' persistence. In such cases I at once leave it off. In other instances patients will tell you (on hearing that you have prescribed copaiba), that it will invariably produce a skin affection. When, not satisfied with this statement, I have given the remedy, I have sometimes found that the idiosyncrasy is a permanent, and not a temporary one, and have been obliged to desist. In other cases the dull heavy pain in the kidneys has obliged me to desist from the employment of the oil. In these cases it is well to bear in mind that when copaiba does not succeed, a state of constitution is generally indicated anything but satisfactory, and the convalescence will be slow and the probable action of other remedies uncertain.

Cubebs.—There are many surgeons who prescribe Cubebs in the treatment of Gonorrhœa. I seldom do so; but as it is almost ranked with copaiba in value by some, it must take its place in this work.

The history of the introduction of this substance into European practice, as given by Dr. Crawford, the historian of the Indian Archi-

pelago, is as follows :—" An officer of the Indian army sailing up the Ganges, contracted an inveterate gonorrhœa, and had recourse to the usual remedies without effect. One of his servants proposed the cubebs, and it was used with success. This officer communicated the fact to the surgeon serving in Java, where the disease was at that time frequent and the remedy abundant. Having been given in many instances with success, the practice was gradually disseminated on the island, and subsequently found its way into this country." (" Ballingall's Mil. Surgery," p. 446. Second Edition.)

On the stomach, cubebs acts like the pepper tribe generally, exciting that organ ; its curative powers are exerted more especially on the small intestines, but, instead of producing diarrhœa like copaiba, cubebs occasions constipation ; we may, therefore, be obliged to combine it with purgatives. In some cases, this powder irritates the stomach to such a degree, that gastritis ensues : the surgeon should be aware of this, and leave off administering it on the occurrence of the first symptoms. This is one of the reasons for preferring copaiba ; another is, that cubebs is very liable to adulterations which are not easily detected. M. Ricord was formerly in the habit of stating in his lectures that he had met with two very serious cases where he suspected an adulteration ; the dose given did not exceed six drachms, and the two patients obtained the powder from apothecaries in different parts of Paris ; yet, an hour after taking the medicine, vertigo, trembling of the limbs, dilatation of the pupil, together with convulsions, occurred. In one case, erysipelas, followed by gangrene of the thigh, came on, and the patient sank in twenty-four hours. The remainder of the cubebs was analysed, yet no adulteration could be detected ; the papers, however, were not observed to be greasy as they usually are. On the other hand, its cheapness, the ability of the stomach to support its use, its less penetrating smell, and the fact that no eruptions follow its employment, have made it a standard remedy. Notwithstanding, I believe copaiba to be the more efficacious of the two remedies for the cure of blennorrhagia.

The usual dose is \mathfrak{zj} of the powder to be given three times a day, in a little milk. In larger doses I have seen it produce great mischief. I believe it caused inflammation of the prostate in a gentleman who took half a pound in two days ; the discharge was checked by the powder, but returned, and the prostate recovered itself very slowly.

Sir A. Cooper gives the following account of his knowledge of the value of cubebs, showing it to be of modern introduction.

" I will now tell you how I first learnt the value of this remedy ; a gentleman from Java, who had lived for some time in Batavia, entered my room, and, unbuttoning his clothes, immediately showed me the part about which his mind was uneasy, and asked me whether a sore upon it was venereal ? I said, certainly not. He said he was glad to hear it, for, if it had been a chancre, he should have supposed that it had been produced by his curing a gonorrhœa very suddenly. He was running away very hastily, when I requested him to tell me how he had cured this gonorrhœa so suddenly. ' Why (he said), by cubebs.' ' Cubebs ? (said I), what is that ? ' for I had really at that time never heard of such a thing. ' Why (said he), it is a species of Java pepper, and, if you like, I will send you a bottle of it.' I said

I should be obliged to him. He accordingly sent me a small bottle of it, which I put into my desk, where it remained, without my thinking any more of the circumstance. Two or three months after, he came to me again, and said that having a severe gonorrhœa, he should be obliged to me, if I had any of the cubebs left, to let him have a little of it. This was on a Thursday: I gave him the bottle, and after examining this gonorrhœa, which was very severe, I requested him to let me see him on the following Monday. He came to me on that day, and the discharge was quite gone. This excited my attention, and I began to think that it must be a medicine of great power. Very soon after, a gentleman came to me, and said that as he was going to give a very large dinner-party, and should be obliged to drink a great deal of wine, he wished to be cured of a clap immediately. I told him I could not promise to do any such thing, but, if he liked, I would give him a remedy, which a gentleman from Java had used with great success: and I then related to him the circumstance which I have just mentioned. The gentleman said he would try it, and he should prefer it to the balsam of copaiba, of which the people in his house knew the smell. He began taking two drachms three times a-day, on a Tuesday, and on Wednesday week after, the discharge not having entirely disappeared, he called on me to know whether he might take wine the next day, when he was to give his dinner-party. I told him I saw no objection to it, and the effect of the wine he drank on that day, added to the cubebs, completed his cure, for the discharge did not return afterwards." ("Lectures on Surgery," p. 595.)

Supposing this story of Sir Astley Cooper's to be reported correctly, I can only say that I should not dare to repeat the experiment; and if I did, I should not expect the same result, either that the cubebs would cure the disease so rapidly, or that a patient could take wine so immediately afterwards. Although I am not in favour of giving cubebs, yet I may remark that as lately as October, 1858, I saw Ricord giving cubebs to his out-patients according to the following formula:—

R. Cubebæ . . . ʒj.

Alum . . . ʒj.

M. ft. Pulv.

This quantity to be taken in the course of the day in three doses.

Persons of a lymphatic temperament may take with advantage iron combined with cubebs. A favourite formula of M. Ricord's is the following:—

R. Pulv. Cubebæ . . . ʒj.

Ferri Sesquioxidi . . ʒj.

M. ft. Pulv. Cap. coch. minim. j. ter die.

M. Cullerier, at the Venereal Hospital, employs the following electuary:—

R. Pulv. Cubebæ . . . ʒiss.

Bals. Copaibæ . . . ʒvj.

Ol. Ment hæ . . . ℥xxiv.

Cap. coch. min. j. ter die.

On returning to England, I began again to prescribe cubebs, but found that patients would not generally take the powder either in milk

or water, and those that did, did not recover. I tried the powder in capsules, but without any satisfactory result. I then tried an ethereal extract of cubebs, and gave it in capsules, but the result even of this not being satisfactory, I have been obliged to give up the remedy.

There are two forms of cubeb capsules kept by chemists. One contains the oleo resinous extract (consisting of the resinous and volatile principle of the fruit,) and in some cases I have found it a very efficient remedy, but the expense is the great drawback to its general use.

The other form of cubeb capsule contains the ethereal extract of cubebs, and this mode of administration is found preferable to giving the nauseous powder, which is very disagreeable to many stomachs.

The dose given may be one capsule two or three times daily. I have not found in practice that very large doses of copaiba or cubebs are necessary; it appears indispensable, however, that the urine should always contain a certain quantity of these active principles, and when recently passed it should smell strongly of them. There is another way of giving copaiba and cubebs which deserves attention. I allude to the different forms of pastes or electuary, which I sometimes use when I want to combine these remedies with other ingredients. Thus I order in some cases an electuary, according to the following formula in doses of one teaspoonful three times a day:—

R. Pulv. Cubebæ	$\frac{3}{4}$ iss.
Bals. Copaibæ	$\frac{3}{4}$ ss.
Theriaceæ	$\frac{3}{4}$ v.
Ext. Hyoscyam.	$\frac{3}{4}$ ss.
Mag. Calcinat.	$\frac{3}{4}$ iss.
Pulv. Camphoræ	$\frac{3}{4}$ j.

M. ft. Electuarium.

The following is another formula, which may be of use when the surgeon does not want to combine cubebs with copaiba.

R. Bals. Copaibæ	$\frac{3}{4}$ vj.
Mag. Calcinat.	$\frac{3}{4}$ iss.
Ext. Hyoscyam.	$\frac{3}{4}$ ss.
Pulv. Camphoræ	$\frac{3}{4}$ j.
Theriaceæ	$\frac{3}{4}$ iij.
Micæ Panis	$\frac{3}{4}$ iss.

M. ft. Electuarium. Cap. coch. j. min. ter die.

The copaiba appears to have that specific effect on the mucous membrane alluded to above by M. Ricord. The magnesia neutralizes the acids of the urine, the hyoscyamus allays, or prevents, any irritation of the prostate or bladder, and the camphor checks the disposition to erections, which, without it, often become a very urgent complication, thus causing recurrence of the disease.

Paste has this additional advantage over mixtures of all kinds, that it may be taken in wafer-paper, so as completely to disguise the nauseous taste of the ingredients: as its use is by no means general, I shall here insert a short article which I wrote on the subject, in the *Pharmaceutical Journal*.

Wafer-paper.—This paper, according to Dr. Ure, is made in the

following manner :—" A certain quantity of fine flour is to be diffused through pure water, and so mixed as to leave no clotty particles. The pap is not allowed to ferment, but must be employed immediately it is mixed. For this purpose a tool is employed, consisting of two plates of iron, which come together like pincers, or a pair of tongs, leaving a small definite space betwixt them. These plates are first slightly heated, greased with butter, filled with the pap, closed, and then exposed to the heat of a charcoal fire. The iron plates being allowed to cool, on opening them the thin cake appears dry, solid, brittle, and about as thick as a playing-card." ("Ure's Dictionary of Arts," p. 1279.) We meet with it in small sheets, of a light colour, breaking easily when it is dry, but tenacious and moulding itself easily to the substance it covers when wet, increasing but slightly its bulk. When any powder is to be taken, it must be mixed with syrup or other tenacious substance, to the consistence of a bolus, and as much of the paper as may be necessary to envelope the mass is broken off. The paper must be dipped in a tumbler of water, and then laid on a plate, or clean surface. The paste, in proportion of a teaspoonful, is to be placed in the centre of the moistened wafer-paper, the corners of which may be carefully folded over it; and the patient having previously taken a mouthful of water, the bolus, thus enveloped in wafer-paper, should be thrown down the throat, as the head is held a little back. It is surprising how easily patients acquire the tact of bolting these boluses, without any convulsive action of the muscles of the throat." (*Pharm. Journal*, vol. v. p. 503.)

I generally take the precaution of having a glass of water in my consulting-room, and with a piece of crumb of bread show my patient how easy it is to swallow large boluses thus enveloped, without nausea, and I direct the paste to be taken after meals. Some persons dislike swallowing common wafer-paper, its entire absence of taste is disagreeable; and Messrs. Bell are in the habit of giving it a ratafia flavour by pouring a few drops of essence of almonds upon it, thus catering to the taste of the patient. After taking it some days, patients will occasionally complain of a pain at the pit of the stomach after swallowing it, the wafer lies there like a piece of indigestible food, and its use must be relinquished, and other means substituted; this unpleasant symptom only happens in persons of very delicate health, whose digestion is liable to be deranged by any slight cause. There are, however, others who, after taking paste for a few days, get a disgust to swallowing these wafers.

In this and the former case great benefit will be derived from desiring your patient to wash down each dose of the medicine with spruce-beer made without ginger, or effervescing lemonade.

Injections.—After the employment of a variety of injections, I have come to the conclusion, that no one is so generally successful as is that of lead. The formula I employ is the following :—

R. *Liquor Plumbi Diacet.* . . . ʒiij.
Aquæ Destill. ʒiij.

M. ft. Inject.

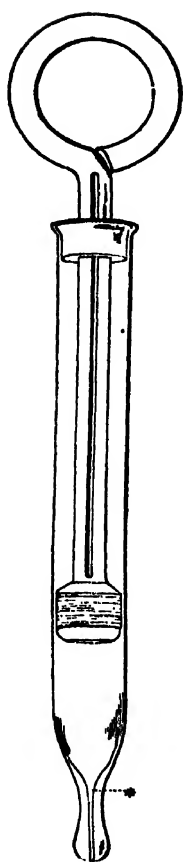
I do not, however, alone *prescribe* the injection, but I now invariably desire my patient to employ one of cold water in my presence,

to see if he really knows how to use the remedy, and find that nine out of ten patients (even professional men often fail,) are unsuccessful.

Many surgeons think it sufficient to prescribe an injection for a patient, in the belief that he knows how to use it ; others desire the sufferer to press on the perinæum while employing the remedy, to prevent the fluid entering the bladder, believing that the injection will readily reach that viscus ; if, however, the experiment be tried, the surgeon will be convinced that every drop of fluid will return, and as to pressing on the perinæum, it is a useless precaution, as the injected fluid will merely come in contact with the anterior portions of the urethra. One of the causes of the difficulty in curing some discharges is that the injected fluid cannot reach the posterior part of the canal, namely, the membranous and prostatic portion, so that instead of impeding the course of the fluid, we should encourage it. Another error consists in supposing that pressure in the perinæum with one hand, will prevent the fluid injected with the other from passing. If the fluid does not pass, it will depend rather upon the want of force or proper direction of the syringe used with one hand, than to any supposed hindrance from this deep-seated pressure. If any one doubts what I assert, let him direct a patient, who has never himself applied an injection, to employ one with cold water ; the sceptic will then see that no fluid, or scarcely any, enters the urethra at all, as it passes out as quickly as injected in, and the result will prove to the medical man that injections, as usually prescribed, are almost useless.

Convinced then, of this, I have long found it necessary to educate every patient who comes under my care for the first time, in the use of the instrument ; and this brings me to say a few words on the subject of syringes. I cannot do better than extract the following letter which appeared in the *Medical Gazette* in 1841, in which I introduced to the notice of the Medico-Chirurgical Society a syringe, which is now to be found in every chemist's shop in London, so preferable is it found to all others.

"When I order a glass syringe, my patients are sometimes served with a thin glass tube, having a wooden piston ; the extremity of the instrument is drawn to a fine point. In other instances they procure the more expensive syringe, made of a glass tube tipped with ivory, the piston of metal ; and this has likewise a conical-shaped extremity. The price of this instrument (4s. 6d.) places it beyond the reach of many of our poorer patients, and it is, moreover, liable to many objections : by employing nitrate of silver, these instruments become dirty, and are cleaned with difficulty, the ivory becoming discoloured and the metal piston corroding. Patients observe this ; and more than one has objected to continue the use of an acid (as they call it) which produces such effects on metal. On the other hand, the surgeon will justly object to the introduction of all pointed or conical-shaped syringes into the urethra, as very liable to irritate the membrane ; and, unless properly introduced, the point will often be pressed against the side of the canal, preventing the escape of the fluid. Lastly, it is almost impossible to press the canal against a conical-shaped instrument, so as to prevent the fluid returning between the urethra and the instrument.



"The tube, as well as piston, of the instrument I make use of, is made of thick glass, to prevent all chance of breaking, unless it fall from a considerable height. The cylinder is made as true as possible, and instead of terminating in a conical extremity, the canal is carried the distance of half an inch (as marked in the woodcut with*) through the bulb of solid glass. By this simple contrivance the fluid is forced, with additional power, out of the instrument, and the stream does not become so soon divided. The advantages of a bulb will be at once apparent; the patient runs no risk of wounding the inflamed urethra, and a free passage is always insured to the fluid, even if the instrument should not be introduced exactly parallel with the direction of the canal. Pressure can be readily and effectually made on the sides of this syringe, so as to prevent even a drop of fluid from escaping from the urethra until the patient desires it. The bulb may be made of various sizes, according to the object we have in view; I generally prefer it of the diameter of the blunt extremity of a goose-quill, as I find it will then readily enter into the urethra of persons who contract gonorrhoea; for, as I have stated, one of the predisposing causes of that complaint is a large meatus urinarius.*

"In educating a patient to use the syringe, the following remarks may not be without their practical advantage. Let the patient, when standing up, introduce the bulb of the charged syringe, held in

the right hand, a quarter of an inch into the urethra, and compress it moderately in the circle formed by bringing the point of the index finger of the left hand to the second joint of the thumb; or, by pressing the canal against the syringe by the thumb and forefinger of the left hand; then, by forcing the piston down quickly, the fluid will readily enter the urethra, and not return until the pressure is withdrawn, when the *whole* will escape." (*Med. Gazette*, 1841, vol. i. p. 429.

TREATMENT OF ACUTE GONORRHOEA.—When the inflammatory stage has set in, I prescribe a purgative. I find fifteen grains of jalap with two grains of calomel answer well. This must be followed by the usual antiphlogistic remedies. For the time being, specifics cease to exert their influence, and should not be employed.

* Within the last year or two various modifications have been made in this syringe by manufacturers. A real improvement consists in substituting a flat head for the ring on the handle. Others have enlarged the diameter of the tube, and consequently are able to shorten the length of it; by this means a patient can inject with greater facility. The general principles of the syringe, however, after twenty years' employment, remain unchanged, and I think English glass syringes are not to be surpassed. I was surprised lately (October, 1859) to see in Paris the French practitioners still employing the instrument I spoke of in the preceding page—having a thin tube and a wooden piston.

In private practice, however, leeches had better not be used at first, unless the inflammation be very severe; rest in the horizontal position; warm baths, fomentations, low diet, antimony in small doses, henbane, and opiate enemata, with light clothing at night, and that mildest form of aperient medicine, castor oil, will usually suffice to check the inflammatory character of the disease. Of course urgent symptoms should be treated by leeches, but their application is always attended with inconvenience, and when the inflammation is deep seated, their advantage is very temporary; when you decide on using them, they should be applied to the perinæum or groins, and in sufficient quantities to have some immediate influence. As a general rule, less than a dozen and a half should never be used, and the bleeding should be encouraged; a few only irritate, without unloading the vessels.

During the last few years I have almost completely laid aside active depleting measures, and employed tartar emetic to lower the circulation, and employed opium in the form of suppositories according to the following formula:—

R Pulv. Opii gr. j.

Butyrii Theobromæ Cacaonis . gr. x.

M. ft. Supposit. j. omni nocte sumend.*

As, however, a variety of complications may occur, it will be well to describe the treatment of each separately.

In elderly persons the disease assumes a somewhat peculiar character; the inflammation has a brick-red colour, and there often is a burning pain in the perinæum, with a frequent desire of making water. These symptoms are not so alarming as in younger persons, and the usual treatment must be pursued.

1. *Chordee and Erections*.—The treatment of these complications with camphor and opium, taken by the mouth, has not, in my experience, succeeded as well as I could have wished. I have found the greatest amount of relief arise from opium, given in enemata or in the form of suppositories. I have used belladonna as an external application, but it is a dirty agent, soiling the linen and the patient's sheets; fomentation, and wet lint covered with oil-silk, have been the best local applications I have tried. The patient should not drink much fluid late at night; be particular not to lie on feather beds, use little bed-clothing, make water as often as he wakes in the night, and if chordee come on, let him draw his knees up to his chin; above all, let him avoid, if possible, sleeping on his back, and a towel with a knot opposite the spine will often assist in preventing this.

2. *Retention of urine* is a symptom that is occasionally found complicating the acute form of gonorrhœa. In such cases I at once put a patient in a warm bath, and give him an opiate suppository. I generally find that in a few hours he falls asleep, and

* In France the bromide of potash has been employed to relieve inflammation and irritation about the urinary organs. It is prescribed according to the following formula:—

R Potassii Bromidi ℥ss.

Sacchari Albi ℥iij.

M. et div. in pulv. xij.

Cap. j. omni secundâ horâ,

on waking he is able to make water in a small stream ; hot water applied to the perinæum will often answer if a bath is not to be obtained. Ricord gives the following directions on this score :—

“It frequently happens that there arises an obstruction to the passage of urine in some limited point of the membranous, spongy, or prostatic region of the urethra. As long as the impediment is slight, the surgeon should be careful how he introduces instruments, and antiphlogistic remedies should be employed, as well as emollient applications ; baths, however, are not always useful. But if complete retention has existed some time, if it resist antiphlogistic remedies, and if the bladder become distended with a large quantity of urine, the case becomes serious, and the water should be drawn off by instruments. The structures traversed by the instrument are soft, inflamed, and easily torn ; deprived of their elasticity, they should be handled very gently, and a gum elastic or metallic catheter should be employed. The rapid passage of an instrument may occasion a false passage.

“When the catheter has reached the bladder, the water should be drawn off, and if not held tight, the instrument may be withdrawn, and antiphlogistic remedies freely employed ; but if, on the contrary, the instrument is introduced with difficulty, and is embraced firmly by the walls of the canal, the catheter should be left in, for the surgeon can never be certain of being able to introduce it a second time, if he withdraw it. It is true he runs the risk of producing inflammation, as well as abscesses on the outside of the urethra, but still the patient is sure of being able to pass his urine.

“The instrument must be left until it is no longer held tightly. In case you are unable to pass a common catheter, the surgeon must have recourse to puncture of the bladder, or forced catheterism, but we cannot here dwell on these operations.”*

“3. *Urethral hæmorrhage* may be caused by erections in chordee,—the introduction of catheters,—and by rupture of the canal from violence to the urethra. We generally succeed in curing it by cold applications, or by causing the patient to sit on a strong roller of linen applied to the perinæum ; sometimes cold injections succeed. If the hæmorrhage do not cease, we may introduce a sound into the urethra, in order to exert pressure upon the tissues which give rise to the hæmorrhage. And when the rupture has taken place in front of the scrotum, we may add a circular bandage, which has the advantage of compressing the tissues against the instrument. Such a case should, however, be carefully watched, for compression thus employed is not unattended with danger. If there is reason to believe that hæmorrhage is produced by exhalation from the vessels, the ergot of rye may be beneficially employed.

“4. *Inflammation of the Neck of the Bladder*.—The symptoms of this accident have been already detailed (p. 53). The treatment should consist for the most part in antiphlogistic, laxative, and sedative remedies. But sometimes these means fail, and tenesmus, and a great desire to make water, come on. In such a case, cauterization with Lallemande’s instrument should be tried. Quo-

* See Section on Stricture *post*.

tidian intermittent fever is also one of the complications which accompanies this complaint, and the same means which relieve the former disease will cure the fever. If, however, it take a tertian form, or if it become but a complication, we must have recourse to the treatment of intermittent fever.*

"5. *Abscesses*.—These should be opened at the commencement when easily accessible, for it is better to be a little too early than too late; but in opening them, the patient should be warned of the consequences, or results arising from the disease itself may be attributed to the means we use. It is important then to tell them, that in spite of the external opening the surgeon makes, the pus may find its way into the canal of the urethra, and produce fistula. Whatever the condition of the abscess, you should protect the urethra in giving an outlet to the pus. Abscess in the prostate, according to the position it may be placed in, may point towards the urethra, perinæum, or rectum; in either of the last cases it should be opened as soon as fluctuation can be detected. If the abscess points in the direction of the urethra, the surgeon often opens it by the introduction of catheters."†

If a rational plan of general and local treatment is followed, the symptoms subside in a few days; but there are irritable constitutions which give great trouble. I have had several such cases; one occurred in a medical man. The sub-acute symptoms continued in spite of all my own and others' endeavours to stop them, and time alone seemed to benefit the patient, as he gradually got well. He was possibly reduced too low at first, as the cure was effected under a tonic treatment carefully arranged. These irritable persons will hardly bear either a depleting or stimulating plan; they are a class by themselves. The inflammatory symptoms do not run high, but persist in a most annoying way.

I have lately had a case under my care showing the difficulties a surgeon meets with in actual practice. A barrister who had been in a very delicate state of health for some months, contracted gonorrhœa. His stomach would not bear copaiba or cubebs; a state of depression came on under their influence that was unbearable; enemata containing these preparations were tried, but irritability of the rectum obliged me to leave them off; injections could not be borne by the urethra, and time and attention to diet alone succeeded in ultimately curing this patient.

As soon as the sub-acute inflammatory symptoms have subsided, I commence or recommence the specifics, either cubebs or copaiba, given in the form mentioned at p. 65, and have no hesitation in resorting, as soon as the discharge is a little checked, to astringent injections, watching them carefully, and discontinuing them on the reappearance of inflammatory symptoms. But I hardly remember an instance in which I have been obliged to omit them on this account.

* See Section on Inflammation of the Bladder.

† See Section on Fistulous Openings.

SECTION III.

CHRONIC GONORRHOEA OR GLEET.

DEFINITION.—A slight discharge from the urethra of a serous, mucous, or muco-purulent character, unattended with scalding or pain in making water.

In some instances the lips of the meatus will be found glued together, and a drop of yellowish fluid may be pressed out. This appearance is sometimes seen only in the morning ; occasionally there is a constant weeping from the urethra. The patients' linen may be without stains for days, as long as he leads a regular life ; but on his indulging in wine or taking exercise, the symptoms may return, and continue for months.

Patients attach no very definite meaning to the term ; with them every discharge from the urethra, if it has existed some time, is gleet. I meet with patients suffering from frequent seminal emissions which they call gleet. Impotence, stricture, irritable urethra, and imaginary ailments, come under this general term. The word, however, can be rightly applied only to chronic discharges, the sequelæ of gonorrhœa, which more properly form the subject of this chapter.

SYNONYMOUS TERMS.—The French usually call this affection chronic blennorrhagia, and in common parlance they use the term "goute militaire," as if it were more common in the army than in any other service.

Symptoms.—In many instances the symptoms attending gleet are merely those which remain after the severer ones of gonorrhœa have subsided, and the chronic stage has commenced. This is known by a diminution of the scalding in making water ; the discharge, which was previously purulent, becomes mucous, although it continues abundant ; in some cases it is not observed during the day, but in the morning the lips of the meatus are found glued together, and a very small quantity of mucus escapes ; on the linen a stain is left like that of gum ; in some persons no other traces of discharge can be found than various mucous flocculi, resembling little pieces of vermicelli suspended in the urine, and to be seen whenever a patient makes water in a clean glass, but not secreted in sufficient abundance to form a drop, being washed off from the mucous membrane as the urine passes along.

I have sent a great many specimens of these discharges to my friend Dr. J. W. Griffith, who has so ably written on urinary deposits ; and he has kindly favoured me with the following description.

"These, when examined microscopically, are seen to consist of amorphous granular shreds of mucus, with pus corpuscles and epithelial scales. The epithelium is generally of the pavement kind, that modification of it which lines the bladder. Hence their source is probably the mucous membrane of the bladder.* The mucous flocculi

* "In some cases I have seen small, flattish, ciliated epithelium scales contained in them. I am not aware that ciliated epithelium has yet been detected as a constituent of any portion of the human urinary or genital tract. It probably arises from either the sinus pecularis, prostatic ducts, or the kidneys near the malpighian bodies."

above mentioned must not be confounded with the apparent shreds formed by the adhesion of pus-corpuscles and epithelium scales to hairs or cotton fibres, such as are not uncommon in urine. The former may be found in urine the moment after it is passed."

When my attention was first called to the above appearances, I entertained the hope that the microscope would have enabled the practical surgeon to say from what part of the canal the secretion came; but this has not been realized, as frequently pus, mucus, and epithelial scales, coming from the different portions of the canal, are found mixed together; still, when the one or the other predominates, a rational diagnosis of the situation of the lesion may be made. However, in practice, the treatment will differ little, and this is fortunate, as the surgeon can take so little advantage of the distinctions the microscope points out.

HISTORY AND COURSE OF THE DISEASE.—Should a patient who has contracted gonorrhœa allow the complaint to progress, or lead an irregular life during treatment, the discharge will continue in spite of remedies, whether they are persevered in or not. At length the disease abates, but an habitual gleet remains, aggravated by violent exercise, wine, or other exciting cause, but again subsiding when the cause is past. The patient often complains of a tickling or itching along the course of the urethra, or this may be confined to a particular spot. Months or even years may pass, and the patient remain in *statu quo*. Treatment with the usual category of cubebs, copaiba, iron, &c., relieve the gleet for the moment, but it returns again and again on slight provocation, to the annoyance of the patient and the discredit of the surgeon, and yet neither one nor the other may have any suspicion of the true nature of the complaint.

At an early period of practice my attention was called to these cases, which presented little in common except the obstinacy of the discharge and the difficulty of cure; yet I found at times that almost anything, such for instance as drinking to excess, or passing bougies, armed or simple, might cause its disappearance, and I began to suspect that in its early stages the surgeon should rather prevent stricture than attempt to cure the gleet. Entertaining these opinions I urged my patients who had long laboured under urethral discharges to allow me to pass an instrument, and I soon found that in the majority of the cases there was disease of the urethral canal more than sufficient to account for the persistence of the complaint; and this brings me to consider the

PATHOLOGY OF THE COMPLAINT.—In the old writers it was a very prevalent notion that chronic gonorrhœa depended upon ulcers existing along the course of the urethra; but Hunter and Cooper have since proved, by dissection of criminals hung during the time they were suffering from gonorrhœa, that no such ulcers were present in the canal, and that mere redness of the mucous membrane existed. Little attention has since been given to the subject, and the condition of the urethra in these chronic gleets has been barely studied except in cases of permanent stricture. As to the latter Sir C. Bell has so thoroughly investigated the subject, that little has been left to subsequent observers. The pathology, however, of the urethra in affections merely attended with chronic discharges, has not met with similar

attention. Death seldom occurs in these instances ; and as the urethra is a part rarely examined, except in well-recognised cases of stricture, it is not surprising that we possess few if any specimens illustrating its pathology.

In my own practice I have never been able to obtain a morbid specimen of the urethral disease I am about to describe ; but since, in analogous membranes, similar changes take place—as far, that is, as we can observe—similar discharges make their appearance, similar sensations in the patient are produced, the deduction seems reasonable that the general course, nature, and consequences of inflammation are the same. If an instrument (say a No. 8 or 10 catheter or bougie) be used in the case of a patient suffering as I have described above, the surgeon will usually find one or more irritable points which are often excessively sensitive ; in some instances, as the instrument passes over the affected points, the surface feels irregular, but no swelling or thickening of the canal can be detected by the finger from the outside. In many instances (and these are in cases where the gleet has existed some time) the instrument detects considerable contraction of the parietes of the canal, which may prevent the further progress of the bougie ; considerable pain is often felt when the bougie passes over the irritable surface, which extends sometimes an inch or more along the course of the canal. Frequently we find two or more such patches following one another at intervals of half an inch, the mucous membrane in the intervening spaces being perfectly sound. When the instrument has passed, the pain usually ceases, but on withdrawing it, a few drops of blood often follow, and the first time a patient makes water, some pain and scalding are present, and he is often sensible of a distinct sore place (as he expresses it), which can be pointed out with the finger. Should the same instrument be again passed in a few days, it will be attended with less pain, and traverse the irritable portion more easily, and a larger size may be substituted, when the same phenomena will recur. And this process may sometimes be repeated till the irritation disappears. It might be supposed that the discharge from the urethra would increase, but such is not usually the case ; on the contrary, it gradually diminishes until it entirely ceases ; but this does not occur until the passage of the largest-sized instrument shows that the normal calibre of the canal is restored.

In the absence of post-mortem examination of these cases, it would be very difficult to characterize the peculiar cause of the obstruction. The sensations felt by the surgeon show that the affection does not depend upon plastic lymph effused underneath the mucous membrane ; for if this were the case the cause would be perceptible, as the complaint usually occurs in the pendulous portion of the urethra. When the instrument is being introduced, the surgeon experiences the sensation of the bougie passing over soft granular bodies ; and my belief is that the urethra presents detached patches of fungus granulations, the result of chronic inflammation. In the female the speculum has shown that in old-standing discharges the walls of the vagina may assume a granular condition. (Plate III. Fig. 2.) Daily observation shows that chronic inflammation may set up this granular affection in the palpebral mucous membrane, and I strongly suspect that in

chronic gleet we have a similar affection of the urethra, giving rise to the characteristic symptoms, and uninfluenced by the specifics usually given.

It is a character of the disease to continue in this granular irritable state for some time, unless proper treatment be resorted to. The granular condition, I believe, may disappear of itself, and effusion take place into the cellular tissue around the canal, giving rise to that form of permanent stricture alluded to in the section on Strictures.

I have previously stated that our standard authors have made scarcely any mention of the form of stricture I am describing, and in others, allusions only can be found to a complaint which, in my opinion, is the most common commencement, and lays the foundation of the most numerous strictures met with in practice. Thus Bell, in describing the varieties of strictures, says, "This sort of *callosity* of the canal differs from the more common strictures in this, that in consequence of the spongy body which surrounds the canal of the urethra often partaking of the effect of the inflammation, the cells are obliterated, and what was loose, spongy, and dilatable has become *condensed and rigid*. This undilatable condition of the urethra, when examined by the bougie or probe, gives the sensation of great irregularity; the point is interrupted, and feels as if it were moving over eminences on alternate sides of the canal." (*Bell*, p. 20.)

Again, under the head of *Dilatable Stricture*, at pages 54 and 55, Bell alludes probably to a form of this stricture, but speaks of it principally as a complication caused by inflammation, or permanent, rigid, or firm stricture, in passages too long to quote here. Sir C. Bell however was, I suspect, only consulted about these cases when the popular and palpable symptoms of stricture had fully presented themselves,

The *Cause* of this condition of mucous membrane is doubtless chronic inflammation, that has not subsided after the acute symptoms of gonorrhœa have passed away. Patients will tell you that they have had an habitual gleet, and that remedies have been tried ineffectually. Copaiba and the usual anti-blennorrhagic medicines have been given in vain, or with only temporary effect on the complaint, which recurs on the least excitement.

The surgeon, however, should not be satisfied with the symptoms alone; he should at once examine the condition of the canal of the urethra, and this is best done by passing a bougie. Formerly the common bougie was employed, but such an instrument as is delineated in the adjoining woodcut is preferable. It is made of gum-elastic, which renders it very pliable. The shaft is graduated. The instrument, previously oiled, is passed along the canal until it meets



THE OLIVARY BOUGIE.

with resistance; gentle force should be employed in the attempt to overcome the obstruction. If the instrument do not pass, smaller sizes are used until the stricture admits the bougie. The instrument is then withdrawn gently, and a stricture is thus detected by the bougie

being held firmly from behind by the contraction. In slight cases of stricture, and in the spongy condition of the urethra we are now speaking of, no plan can succeed as well as this. Moreover, by measuring the distance on the instrument, we are enabled to judge of the exact length of the change of structure of the canal. The form of gleet depending on this condition of the passage becomes now one of the most tractable the surgeon has to treat, and it readily yields to the introduction of the conical bougie two or three times a week. The ailment and its cure, however, more properly come under the head of strictures.

I may mention, nevertheless, that in addition to passing the bougie, I prescribe a weak solution of tannic acid—two grains to the ounce of water,—which I desire the patient to inject into the urethra every night, so that the tonic lotion should come in contact with the whole canal. The benefits of the combination of the two agents, dilatation and injection, are very soon apparent; if much contraction be present the introduction of the bougie for some time may be persisted in, but on the disappearance of the discharge the injection may be discontinued. This is another instance, added to many I have furnished, of injections curing rather than producing strictures, particularly when they are caused by chronic inflammation of the mucous membrane, and shows the importance of a perfect knowledge of the pathology of the canal and its appendages.

In the majority of cases the urethra of a person labouring under gleet will bear a great deal of rough handling; it has become very insusceptible to inflammatory attacks, but exceptional cases every now and then arise, showing the opposite extreme. Such patients cannot bear a second application of the bougie, nor can they bear injections, which increase the discharge; in these exceptional cases all stimulating treatment must be left off, and opiate enemata employed, together with hyoscyamus and warm baths; patience and change of air will do much more than physic. When the irritability has passed, recourse may be again had to dilatation or astringents, but sooner or later stricture may again make its appearance, and this, if not attended to, gives rise to one of the most puzzling and difficult cases we meet with in practice.

Gleet does not depend only upon this form of stricture. A close investigation of the cases met with in every-day practice discloses another state of things which appears unknown to the generality of practitioners, and one which, I feel convinced, is frequently instrumental in keeping up these interminable gleety discharges. The following observations on the complaint I published in December, 1855, in the *Lancet*, and shall now reproduce them, with some slight alterations:—

When the ordinary treatment of gleet does not succeed, and the discharge persists, let the practitioner desire his patient to make water into a long and rather large test tube. He will find the urine clear and free from discharge, but, if allowed to cool, a tenacious jelly-like mucus will appear either suspended in the water, or collected at the bottom of the tube. In some cases this is easily shaken up, and mixes for a moment with the urine. In more severe cases the deposit is tenacious, or holds together at the bottom of the glass. In addition to these signs, which to the practical surgeon are

of great importance, we not unfrequently find pain in passing urine, as well as frequent calls to do so. This pain is occasionally referred to the neck of the bladder, or end of the penis, or may be felt in the perinæum. In other instances the patient complains that there is a heaviness in the perinæum, and some uneasiness along the spermatic cord. Pain, however, is not necessarily present. Pus sometimes appears on the surface of the deposit, which readily mixed with the urine on slight motion. In other instances, where there is less secretion from the bladder, the pus is entangled in the mucus, and we see it suspended in the jelly-like mass a little way from the bottom.

The occurrence of any of the symptoms alluded to above, during the treatment of gonorrhœa, should induce a surgeon to test the urine, and examine it carefully; for, as a general rule, it would be well to lay aside injections and copaiba, as, in this stage, both are worse than useless. The complaint has become complicated by irritation of the neck of the bladder, or prostate, and unless timely treatment be employed, the patient will suffer from some subacute affection of the bladder, which it will be difficult to cure. Two faults, equally great, may be committed at this stage of the complaint; if feeble treatment be prescribed, the disease goes on unchecked; if nitrate of silver and active treatment generally be employed, acute symptoms set in, and the patient may become liable to an affection of the testicles, or great irritation of the bladder.

Inattention to the symptoms spoken of above has caused great blame to be thrown on injections, which I maintain are indispensable in the treatment of the subacute cases of gonorrhœa. I am constantly meeting with instances in which (to a minor degree, it is true) gonorrhœa is allowed to run on, and the patient's stomach becomes enfeebled by large and long-continued doses of copaiba, without any effect produced on the discharge. Let me advise the surgeon, in all such cases, to lay aside the oil, and examine the urine, when he may probably find it in the condition I speak of. Under these circumstances, copaiba appears to have no action whatever, whereas the turpentine has, particularly the extract of the spruce fir. An infusion of the young shoots is to be preferred, but, as in London we find a difficulty in procuring the tops of the branches, I now recommend in all such cases the inspissated extract of the spruce fir, a substance introduced from Norway in small jars, for the purpose of making spruce beer, and which may be procured at most of the Italian warehouses.* I formerly gave the spruce drink, but patients complained that it was not easily obtained, and was a flatulent remedy; so now I order it as follows:—

R. Ess. Abietis nigr. (spruce fir), inspiss. ʒij.

Mag. Carb. q. suff.

M. ft. pil. xxx.

Cap. ij., bis vel ter in die.

Under the influence of this remedy and of opium suppositories, the mucus in the urine gradually diminishes.

Formerly I was in the habit of prescribing opiate enemata; but it is often difficult to induce patients to submit to their administration,

* Blackwell, of Soho Square, keeps it.

and the suppository is preferred. In private practice the young surgeon will find that the feelings of the patient must be studied as far as is compatible with reason, and this reminds me of another hint, which may not be thrown away upon the novice who wishes to succeed. I allude to the vehicle in which the opium is conveyed. I was in the habit of using Spanish soap until complaints were made that it was difficult to introduce the suppository from the mass becoming soft. I therefore prescribe it now as follows, with the butter seeds of the cacao (*Theobroma Cacao*):—

R. Pulv. Opii, gr. i.

Butyrii *Theobromæ* *Cacaonis*, gr. x.

M. ft. Suppositorium.

Nocte utend.

There are contrivances for passing soft suppositories; but patients dislike them, as they are difficult to be manipulated, and I find if the pill is firm it can be readily passed into the rectum.

TREATMENT.—The description above given of the symptoms and pathology suggests the line of treatment which should be followed in gleet, a complaint which has almost been considered incurable, simply because the proper indications have not been followed. Nevertheless, by keeping these indications in view, and adapting our treatment to them, successful results may, I believe, be fairly expected in most cases.

Tonics and Stimulants.—Within the last few years a distinguished surgeon has given a clinical lecture on treating gleet with stimulants, and he advanced the doctrine that our cases do not get well in consequence of our keeping patients too low, and that tonics and stimulants are all that is necessary to effect the cure. In consequence of these remarks, I followed out the indications then given with great assiduity, but I have been greatly disappointed. Indeed, I can say that, as a general rule, no modern treatment has met with less success in my hands. In almost all cases the disease was aggravated by it, and I have accordingly abandoned the method.

It is true, nevertheless, that after other and more appropriate treatment has been practised, a surgeon will do well to perfect the cure by iron or quinine. These agents may do much towards re-establishing shattered health, but as far as my experience goes, it is after and not before the cure of the discharge that they should be tried. If the surgeon depend upon them alone, he will find himself disappointed.

Counter Irritation or Blisters.—These I apply in the following way:—I paint the under surface of the urethra from the meatus to the scrotum as well as the perinæum, extending from the scrotum to the anus, with a coat of tincture of iodine, by means of a small camel-hair brush, or with a little mop made with lint. As soon as one coat is dry, I apply a second, and desire the patient to repeat this process night and morning until some irritation of the skin is produced, taking care that the tincture of iodine does not run down on the scrotum. In some susceptible persons the first application produces smarting of the skin, but it usually takes several days before any local effect is produced. As

soon as the skin peels off, the remedy must be discontinued, and cotton wool be applied to the irritable places. The skin will heal, and the remedy after a day or two's rest may be repeated. In this way we are able to produce counter irritation close to the diseased structure, the patient, meanwhile, not being prevented from pursuing his usual avocations.

I was formerly a great advocate for this treatment, but during the last year or two, I have deserted it for the method described at pp. 75 and 76. I have long since given up the employment of blisters to the perinæum; cantharides in any form is an unmanageable agent, and little adapted to the situation of the disease.

Elderly gentlemen are sometimes troubled with what they call gleet, differing altogether from what we have been discussing. We meet with cases like the following:—A man of upwards of sixty will come complaining that he suffers from discharge, although he has not had connexion. This discharge is yellow or green, abundant, but not attended with pain or scalding. I do not know whence the secretion comes, but I have usually given effervescent alkaline draughts to alter the qualities of the urine. The prostate may be the seat of the disease, or it may depend upon drops of urine hanging back in a sluggish urethra, and so causing irritation. Before quitting the subject of gleet, I may say a few words in connexion with it on

Contagion.—It has been generally admitted, that as long as a gleet consists merely of a serous or milky discharge, it cannot be communicated to a healthy female, but that if it be purulent the disease may become contagious. I should never advise a patient to run the risk of communicating the disease; for who can say that a discharge of a milky character will not become purulent after connexion? Fortunately, however, for women, the parts of the vagina coming in contact with the morbid secretion are lubricated usually with mucus, which prevents the otherwise contagious matter from coming in contact with the mucous membrane. But for this, I am convinced that much more mischief would occur. I have seen a large number of cases of gleet where a serous discharge has become purulent, and yet the female has escaped, I believe from the above-mentioned cause. After a patient has long suffered under gleet, many a medical man has sanctioned marriage, and oddly enough, neither the gleet has increased, nor has the female suffered; but, although I have witnessed such instances, I never would give my sanction in such cases, nor would I advise any other medical man to do so, more especially when, as I confidently assert, proper treatment will remove the gleet, and thus prevent any possibility of infection.

This brings me to consider contagion in another point of view. It occasionally happens that a married man no sooner gets well of a gleet than, on returning to cohabitation with his wife, he finds the complaint recur with its former severity. In these instances an examination of the female will detect her suffering from the *whites*, which will reproduce the chronic discharge in the husband, or the latter may have communicated a gleet to his wife, which, if not cured, will reinfect him again and again. Let the surgeon bear this in mind, otherwise he may believe

himself unable to cure a patient, when, on the contrary, the patient is cured, but relapses occur in consequence of contagion from a source that is not usually suspected, but the possibility of which, in practice, should always be borne in mind. (See Contagion, page 13 *et seq.*)

SECTION IV.

IRRITABLE URETHRA.

IRRITABLE urethra is an affection which is frequently met with, either alone or in connexion with irritability of some neighbouring organ—most frequently the testis or the bladder. In some cases, all are more or less implicated, and suffer successively.

It is not uncommon for a patient to complain of anomalous pain in the urethra, stating that on making water there is exaggerated scalding, but that there is no discharge, and the urine is healthy. In other cases, a particular point is the seat of pain after eating. In some instances, the aching is complained of along the whole canal, and on attempting to pass an instrument, the nervous susceptibility is found increased to an extraordinary degree. This irritability may be confined to the urethra, it may shoot down the perinæum, or it may reach the scrotum. In fact, there is hardly any amount of misery that may not be suffered. The closest examination detects little or no disease, and the usual remedies are comparatively ineffectual. In other instances, some form of disease in a neighbouring organ is found, but even here it becomes a question if it is not the constant supervision of the patient, rather than the disease, that has affected the functions. The treatment of such cases must be undertaken on hygienic principles, and falls more properly under the head of irritability of the Testis and Bladder, to be hereafter discussed.

SECTION V.

BLOODY DISCHARGES FROM THE URETHRA.

THERE are few circumstances which alarm patients more than the occurrence of hæmorrhage from the urethra; and the surgeon will often have to allay unfounded alarms, by telling the patient that the flow of a few drops of blood is not uncommon after connexion, even when the male and female are in perfect health. This slight hæmorrhage is owing, probably, to the rupture of a small vessel; and may last some hours. It sometimes follows the frequent use of injections, but ceases on the discontinuance of the irritating fluid.

Elderly persons occasionally complain of passing blood, or blood mixed with discharge. In these cases, there is often little if any pain in making water, and I have had reason to suspect the existence of that fungous granular condition of the urethra spoken of at p. 74. Such a condition of mucous membrane is not confined to the urethra, but is often met with in elderly persons on the conjunctiva, and is then the consequence of a languid circulation. In these cases, the employ-

ment of astringent injections, properly applied, together with the occasional use of bougies, is highly advantageous, as well as the administration internally of the essence of spruce-fir. In a certain class of young men of a pale cachectic hue, we find this hæmorrhagic tendency attended with heaviness in the perinæum, frequent desire of making water, with some scalding. On micturition, blood sometimes passes with the last drops of urine. This last symptom may be absent for some days. The most interesting case of the kind I ever witnessed I saw in consultation with the late Dr. Bright. We could detect no affection of the kidneys. The urine presented no peculiar character, except an additional deposit of mucus, and we attributed the phenomenon to a general disposition of the surface-vessels to pour out blood, the mucous membrane of the urethra being the spot where it was exhibited. This patient was cured by opiates, suppositories, and the essence of spruce. After some time copaiba was given, and he ultimately recovered, under the influence of dilute sulphuric acid. In this particular case injections seemed to aggravate the disposition to hæmorrhage.

There is a slight bloody discharge sometimes seen on the shirt, and supposed to come from the urethra, which really arises from the glans penis and prepuce. In such cases the prepuce is narrow, and the irritable state of the mucous membrane produces excoriation of its surface, or that of the glans, and consequent slight hæmorrhage.

In men who have committed venereal excesses, occasional hæmorrhage from the urethra will be noticed. The cure in these cases consists of continence, together with the local applications above alluded to. I have had reason to suspect that hæmorrhage from the urethra occasionally depends upon the breaking down of tubercles in some portion of the urethra, or adjoining parts, and consequent rupture of the vessels. Such cases present all the character of phthisis, and occasionally tubercles in the different stages of softening may even be felt by the hand, or by instruments, blocking up the canal; and these tubercles are among the most obstinate causes of glects. The subject deserves the attention of the surgeon; and I need scarcely say that the treatment required for these cases is similar to that employed when the lungs or throat is the seat of the affection.

SECTION VI.

STRICTURE.

A NOT unfrequent, yet by no means invariable, consequence of gonorrhœa is stricture, to the consideration of which subject the reader's attention is now invited.

DEFINITION.—In the following pages the term stricture will be employed as denoting a diminution of the natural calibre of the urethra.

CLASSIFICATION.—Authors who have written on this subject differ as to the classification of strictures. Sir B. Brodie speaks of two kinds—*spasmodic* and *permanent stricture*.

Sir A. Cooper, in his Lectures, says, "Strictures of the urethra are of three kinds—the *inflammatory*, the *spasmodic*, and the *permanent*."

I believe that these divisions are frequently only different stages of the same complaint. I have spoken a few pages back (p. 74), when treating of gleet, of how stricture begins. The experience there partially recorded induces me to believe that the inflammatory form of stricture is the earliest. As might be expected, it is never of very long continuance, for it cannot long exist without inducing more or less spasm. And accordingly, from the calibre of the urethra being suddenly diminished by muscular contraction, the affection in this its second stage has been styled *spasmodic* stricture. Almost all, however, are now agreed that *pure* spasmodic stricture is very uncommon. Sir B. Brodie thus describes the affection :—

“A man who is otherwise healthy, voids his urine one day in a full stream. On the following day, perhaps, he is exposed to cold and damp ; or he dines out, and forgets, amid the company of his friends, the quantity of champagne or punch, or other-liquor containing a combination of alcohol, with a vegetable acid, which he drinks. On the next morning he finds himself unable to void his urine. If you send him to bed, apply warmth, and give him Dover's powder, it is not improbable that in the course of a few hours the urine will begin to flow. After the lapse of a few more hours, you give him a draught of infusion of senna and sulphate of magnesia, and when this has acted on the bowels he makes water in a full stream.”

I can only say that my experience furnishes me with very few instances where a person with a perfectly healthy urethra suffers in this way. I have however seen many instances of persons suddenly seized with just these symptoms, while suffering from an attack of gleet, whether recent or of long standing, if they expose themselves to the causes above alluded to. In other words, a previously thickened state of the mucous membrane of the urethra is complicated with spasm.

The third form of stricture—viz., *permanent* or *organic*—is, in my opinion, only an advanced stage of the disease in which the contraction of the canal is further advanced, and depends on the accumulated deposit of organized lymph either beneath or around the mucous membrane.

Another division of stricture is that of *Permeable* and *Impermeable*. Every stricture through which an instrument can be passed is, by this nomenclature, a permeable stricture. Those which the bougie or catheter—straight or curved—cannot pass, are impermeable. The great objection, of course, to these terms is, that the stricture that is permeable to one medical man, is not so to another. Some surgeons, indeed, deny the existence of impermeable stricture. That such nevertheless exists, I think there can be no doubt. That by force the bladder can be reached by making false passages is, however, equally certain.

I shall, in the following pages, neglect these definitions and divisions, and simply describe stricture as I meet with it in practice, considering inflammation and spasm as causes of it, or as complications that frequently attend it.

CAUSES OF STRICTURE.—That *inflammation* is one of the most violent causes of stricture, few will deny. In acute cases of gonorrhœa, we find that the lips of the urethra are turgid with blood, and œdematous ; that the patient makes water with difficulty in con-

sequence of the contraction of the canal, and that there is considerable spasm of the muscular structure of the canal.* In the majority of cases these symptoms subside as soon as the determination of blood to the part has diminished. If strong injections of nitrate of silver, be employed before the patient makes water, he will probably be unable to do so for a few hours after the cauterization. I have seen this happen under the treatment of a quack, to the alarm of both doctor and patient.

The long existence of subacute inflammation in the urethra produces the same result, although more slowly, and to a less extent. On examination we find a change in structure, similar to that which takes place in gleet. This change is so common, that we may almost say that stricture does to a large extent depend upon the same causes as gleet.

Injections have been often accused of causing stricture, and doubtless, the injudicious employment of them in acute cases must increase the inflammation; but, in the chronic stages of gonorrhœa they have, in my opinion, no tendency to produce stricture; on the contrary, it is the long-existing chronic inflammation for which the injection was given, that causes the stricture, and not the injection. When popular errors are to be combated, I am always glad to cite the opinions of those who are deservedly respected in the profession, and on the present occasion I cannot help quoting Sir B. Brodie. He says, "Permanent stricture frequently follows an obstinate gonorrhœa. Astringent injections have been sometimes considered to be causes of this disease; but I certainly believe that more blame has been attached to them than they really merit. It is the abuse, and not the use of injections, which is to be deprecated. I have no hesitation in saying, that there is greater danger as to the production of stricture from a very long-continued gonorrhœa or gleet, than from the prudent use of a mild astringent injection."

Gonorrhœa is a very frequent cause of stricture. Other affections nevertheless may give rise to the permanent form. M. Ricord cites the case of a young man, twenty-five years of age, who had been subject to difficulty in passing water from his infancy, although he never had had a discharge from the urethra, nor was there any foreign body present in the bladder to account for it. This patient, when he entered the hospital, laboured under stricture of the urethra, and a most attentive examination failed in recognising any alteration of form in the prostate gland.

Injury to the urethra during connexion will, I believe, produce stricture, as the following case will show:—In the summer of 1856, I attended a man for gleet and stricture in the membranous portion of the urethra, treating him successfully in the usual way with injection and bougies. In December, 1856, he returned, and to my surprise I found a very tight stricture an inch from the meatus. I was fully convinced, that, when he left me a few months before, there

* It is a fact clearly proved by the modern investigation of Külliker, Hancock, and Quekett, that the urethra is a muscular canal, and well supplied with non-striated muscular tissue.

was no trace of this. I passed a No. 8 instrument with difficulty, but there was no pain or contraction in the membranous portion of the urethra. He states that connexion two months ago was attended with pain, and blood followed. Since that period he has been subject to the complaint.

The *rupture of the urethra* in painful and obstinate chordee is another frequent cause of stricture. I need only allude to falls on the perinæum as another, producing the most severe and complicated forms of the disease.

THE SITUATION OF STRICTURE is various, but it is found most frequently at the membranous or bulbous portions of the urethra. This tendency to the formation of stricture arises from that canal presenting the smallest calibre at these points, and from the obstinacy with which chronic irritation lingers there for months, if not properly treated. It has been stated that when several strictures exist, one is always found in the latter situation. There are exceptions to this rule, as may be seen at page 83, and I am attending at present another gentleman whose stricture is confined to the spongy portion of the urethra.

Hunter and Scëmmering state, they have never met with cases of stricture of the prostatic portion of the urethra; M. Ricord, however, has seen this part of the urethra narrowed, independently of the prostate; Mr. Crosse cites a similar case.

THE NUMBER OF STRICTURES may be various; one only may be present. Ducamp affirms that one, or at most two, is the usual number; in this respect, adds M. Ricord, Ducamp is correct. Nevertheless, Hunter states that he has met with six strictures in the same patient. M. Lallemand of Montpellier has seen seven, and Calot eight. About three years ago a patient was admitted into the *Hôpital du Midi*, whose urethra was strictured in its whole extent; there were ten fistulous openings, the most anterior of which was seated on the side of the frænum, the others were situated along the spongy portion of the canal as far as the bulb.

THE FORM OF STRICTURE may likewise differ; viz. it may consist simply of a little band, or septum, stretched across the canal: this is called by Sir A. Cooper the ribbon stricture; or a part or side of the canal may alone be affected. In cases of callous stricture the induration may occupy the whole circumference of the canal, or a part only, as may be proved by the *porte empreinte* of Ducamp. All strictures may be confined to a small part of the circumference of the canal, or occupy an inch of its extent: this, by Sir A. Cooper, is styled the corded stricture.

THE SYMPTOMS OF STRICTURE.—It is surprising how frequently persons suffer from incipient stricture without being aware of it, until some accident calls the patient or surgeon's attention to the fact. Thus a man otherwise apparently healthy, may be supposed to suffer for the first time from spasmodic stricture, while, in fact, he may have long been subject to a slighter form of the complaint. This appears almost daily in treating the various forms of gleet. On passing a bougie in these cases, I find a large proportion with the urethra much contracted; and yet the patients have not experienced any of the inconvenience usually attending stricture. When the disease progresses, however,

the patient soon begins to perceive that his water passes with difficulty; the stream of urine becomes gradually smaller, until it comes away drop by drop, trickling or dribbling down, and staining the trousers of the patient, so that in the street an experienced eye can often at once detect the individual who is labouring under a severe form of strictured urethra. Patients suffering from stricture, when they consult a surgeon, tell him that the urine passes in a corkscrew fashion.

These symptoms are not, however, exclusively those of stricture. A sluggish bladder will often cause the urine to dribble away, and fall on the shoes of the patient; and, on the appearance of this symptom alone, the surgeon would be rash in coming to a conclusion that stricture existed. The same effect will be likewise produced when the penis possesses an unusual degree of contractility, or when it is in a state of erection.

The spiral or corkscrew stream may be produced either by a stricture or by the relative position of the canal to the opening of the meatus. The canal being circular, and the meatus linear, if the bladder does not act with its accustomed vigour, the difference in the direction of these two portions of the canal may give the stream of urine a spiral form.

The cause of the urine being spurted out is sometimes owing to the opening of the meatus being high up, and in such cases, if the bladder act vigorously, the stream of urine will be propelled upwards instead of directly forwards. The same effect is produced by an enlargement of the middle lobe of the prostate. Another symptom of stricture has been drawn from the modification of the ejaculation of the semen. Thus, during the act of coition, the patient feels that an emission of semen is taking place, but none passes from the meatus; afterwards, however, that secretion is seen oozing out by degrees.

These phenomena in passing urine, or in ejaculation, may be accompanied with pain, or swelling of the penis, and the application of the finger detect a hardness at some particular point. The patient often contracts the habit of drawing out the penis, and it might be imagined that he suffered from calculus, were not the other symptoms of that affection wanting. Thus, in stricture, the penis is often longer than usual; chordee is likewise often present, and the organ may be drawn in erection downwards, upwards, or laterally: of course this form of chordee is to be explained by a less degree of elasticity in the corpus spongiosum, as compared with that of the corpora cavernosa, in consequence of the deposition of plastic lymph within its cells.

The symptom, however, which most frequently causes the patient (at least in the incipient stages) to consult his surgeon is the frequent desire of making water. This gradually increases till a patient is unable to take a walk without frequently being compelled to relieve the bladder, although little fluid may be voided. I need not say that this symptom is not peculiar to stricture, but is rather symptomatic of irritation of the bladder.

Another very frequent symptom of stricture is a gleet discharge from the urethra, which the French designate by the term *suintement*. This gleet may sometimes be the only symptom present; it may consist in a mucous or purulent discharge, or the only trace of it is to be found in the existence of little threads, resembling vermicelli, in the urine. Slight as this latter sign is, it very often annoys patients, particularly hypochondriacs, who find, by reading books, that some authors consider it as a symptom of stricture, even in the absence of any other. The dyspeptic will collect his urine in a glass every morning, examine it most minutely, to see if any fibrillæ exist; if they are found, he is miserable for a week. The real value of this symptom has been already discussed at page 74, under the head of gleet.

In that chapter it was found necessary to forestall many observations on this form of stricture. Some still remain to be made on gleet as connected with stricture.

In the form of sub-acute inflammatory stricture, the discharge producing gleet comes from the whole surface implicated; in permanent stricture the gleet discharge most frequently comes from the mucous membrane behind the stricture, and is produced by the stream of urine which is necessarily checked at the back of the stricture, causing irritation, speedily followed by inflammation. If stricture has previously existed, the inflammation becomes aggravated; the urine reacts on the inflamed membrane, which often becomes softened, and a secretion arises as a direct consequence of the strictured canal. It is in such cases that I regard stricture as the cause of the gleet, although, as I have previously observed, a gleet may exist independently of stricture, or, indeed, may cause stricture. Hence the practical advice given above, of passing an instrument in old-standing gleet, to ascertain if stricture already exist.

A gleet may give rise to other consequences; thus, if the canal be much diminished in calibre, the discharge will, by plugging up the passage, occasion complete retention, particularly when the kidneys act freely; if it does not plug up the passage, the tenacious secretion may adhere to the sides of the canal, and cause the patient to make water in a spiral stream.

The adherence of the shreds of mucus to the walls of the canal might, in a case of simple gleet, by causing the patient to make water in a spiral stream, lead the surgeon to suppose that a stricture really exists. But even without passing a bougie, the practitioner may always suspect this cause, if the patient state that the stream of urine is only altered from time to time; should it, however, be permanent, he must attribute it to inequalities of the canal, in fact, to organic change. Inattention to the circumstances frequently causes persons to mistake the effects of mucus blocking up the urethra for spasmodic stricture.

A sluggish bladder will produce the same effect; but this cause will be at once recognised, if, when that organ has nearly emptied itself, the stream becomes natural.

The preceding observations may show how guarded we should be in giving an opinion on the existence of a stricture simply from the

signs above enumerated, as they cannot be depended upon, although of value when associated with others.

Fortunately for the surgeon, he has other means of determining whether a stricture really exist or not.

This he ascertains directly by exploring the canal, from before backwards, by the aid of various instruments, composed of metal, or of elastic and pliable substances, and called *Bougies*, which may be either solid or hollow, straight or curved.

Their volume, like their shape, differs materially; they may be cylindrical, conical, or fusiform; by this last term I mean that one portion of their circumference may be larger than the rest.*

When I wish to ascertain if stricture exists, I am in the habit of passing the olivary bougie delineated at page 75; by this means I ascertain at once the position of the complaint and how far it is from the orifice. By the employment of different-sized instruments the degree of tightness of the stricture, and its length, a most important piece of information in the treatment of the complaint, can also be discovered.

COMPLICATIONS OF STRICTURE.—Stricture, such as we have described it, rarely runs through its course without some complication, which, to a certain extent, modifies the symptoms above mentioned. The two most frequently disturbing causes are *spasm* and *inflammation*. These appear more especially in the young and irritable; old age is less subject to the complication.

Sir B. Brodie thus describes these results of stricture:—"A patient is, perhaps, sitting with his friend after dinner, and feels an inclination to make water: in attempting to do so, however, he is disappointed. A second and a third attempt is made at different intervals, and all without success. Now, however, the case assumes a more serious aspect. There is an indescribable uneasiness felt in the region of the bladder; the efforts to void the urine are no longer voluntary, the patient is forced to strain, and the whole of the abdominal muscles are seen in convulsive action, instinctively endeavouring to unload the bladder of its contents. This viscus may be felt hard and large above the pubes. The heart soon begins to sympathize with the local irritation; the pulse is hard and strong, the face flushed, the skin hot, and the tongue covered with white fur.

* It may be supposed that this means of exploration gives us at once unequivocal signs of stricture. Such is the case when an instrument introduced into the urethra becomes firmly embraced by the stricture; any one having once felt this sensation can never mistake it. But, as is usually the case in medicine, if this be easy, there are other cases in which the diagnosis becomes very difficult. I have above stated that a spasmodic stricture may occur, and prevent the passage of the instrument; in other cases, it will be impossible to pass a small bougie, whereas a large one enters without difficulty; a curved instrument sometimes passes where a straight one will not. A soft instrument may likewise bend upon itself, and produce the sensation as if a stricture existed, and the surgeon is not a little surprised, after gradual pressure, to see the extremity of his bougie reappearing at the meatus. It hence results that, with the exception of the first instance, it is often difficult to diagnose a stricture, and the surgeon may be often led into error. The preceding observations also show how necessary it is to employ various instruments before coming to a decision.

Perhaps the violent efforts of the patient may force out a few drops of urine, and thus afford him some relief; but the kidneys go on secreting, and the relief is only temporary. In the great majority of cases the spasm is spontaneously or artificially relieved; but there are, nevertheless, numerous examples of the contrary, in which the retention terminates even in death. The bladder itself may be ruptured at the fundus, the urine escaping into the surrounding cellular membrane, and into the abdomen."—"Diseases of Urinary Organs," p. 12.)

The cause of this complication may frequently be traced to catching cold or drinking acid wines, or indulging too freely in the pleasures of the table. In some cases it is a gouty diathesis which induces the spasm. The immediate cause is supposed to be spasmodic action of the muscular structure of the urethra, and the spasm is no longer believed to be confined to irregular action of Wilson's muscles, but may be found in other portions of the canal. The obstruction is, however, frequently met with at the membranous portion of the canal.

PATHOLOGY OF STRICTURE.—Stricture may arise either from an alteration of the *surface* of the mucous membrane, an alteration in the *thickness* of its parietes, or an affection of the *parts around* the urethra.

1st Variety. Alteration of the Surface.—I have already, at page 74, alluded to these pathological changes; in addition, however, to these we may find various forms of ulcers, with edges more or less elevated, and a fungous appearance of the surface, as Bruner and Mery state.

In certain cases the calibre of the urethra is diminished by vegetations, as Hunter, Bell, and Baillie, have admitted. These vegetations may occupy any part of the canal. M. Ricord states that he has also found vegetations not only in the membranous, but likewise on the prostatic portion of the urethra, in the same subject.

Laennec mentions cases where he observed false membranes attached to the mucous membrane of the urethra, thus producing stricture. M. Ricord, in citing these observations, says he has never met with similar cases, but in no way doubts the possibility of their occurrence.

In addition to the lesions of the surface above described, I must mention cicatrices, the result of ulcers of various kinds, seated at different points of the urethra, or following rupture of the canal from any cause. Gangrene may produce a loss of substance, and the part, in cicatrizing, may not only diminish the calibre, but likewise shorten the urethra, or produce on its surface bands, or bridles, which may, more or less, alter the dimensions of the canal. Let it be remembered that cicatrices are permanent alterations, and that when once formed they have no tendency to become absorbed. This must be borne in mind by those who recommend the use of *potassa fusa*, or any treatment which will produce a slough.

Sœmmering and other authors have spoken of an hæmorrhoidal state of the posterior part of the canal; this often depends upon an impeded circulation of the part; in such cases, bleeding frequently

occurs under slight causes, as on the introduction of an instrument, or even after voiding the urine.

2nd Variety. *Alteration in the thickness of the Mucous Membrane, and Sub-mucous Cellular Tissue.*—It has been stated that acute or chronic inflammation often produces a swelling of the mucous membrane, and this frequently becomes a cause of stricture; but as inflammation lingers longer, and is most severe in the deeper portions of the canal, this variety occurs most frequently in these situations. The swelling does not always present the same aspect; it may be either circumscribed or diffused, may occupy only a point or the whole circumference of the canal, and be attended with deposit of lymph, which becomes organized. This fibroplastic substance deposited around the urethra forms that elastic tissue which is so little susceptible of treatment. It has been compared to, and does to some extent resemble, india-rubber. In some instances this deposit assumes a cartilaginous appearance, and almost resembles gristle to the touch.

There is, however, another alteration in the canal, to which theories at one time or another in vogue have prevented surgeons from paying that attention which it deserves; I refer to that form of induration which elsewhere I have called specific, and which accompanies chancre in the urethra, as well as in other parts. These indurations may be seated in any portion of the urethra, and usually resist local treatment. Indeed they often become aggravated under mechanical means of cure, whereas they disappear very rapidly under general treatment. They will be fully considered under the head of chancre of the urethra. Cancer, scrofula, &c., may also give rise to swelling of the urethra, and thus produce stricture.

There is a peculiar form of induration of the canal of the urethra, or rather of the *corpora cavernosa*, which deserves a more detailed account.

The following are the particulars of a case which I saw in the wards of M. Ricord during a late visit to Paris. The disease is a form of which I have seen but few examples in England, although they do sometimes appear in practice, and when they do, puzzle the practitioner very much. I am indebted to M. Ricord's Interne for the full particulars of the case.

James Wydler, 42 years of age, a stuff printer by profession, of a lymphatic temperament and worn expression of countenance, came into hospital on the 31st of September, 1855. Salle 4, bed No. 15.

History.—Antecedents. This patient has suffered from five attacks of gonorrhœa; the first at twenty-one years of age, the last still troubles him. Four months ago he contracted a chancre of the prepuce, for which, by the advice of a chemist, he took some pills, (of the composition of which he is ignorant,) during two months. Has had no secondary symptoms, leading us to suppose the chancre was not an infecting sore, although it is too soon to give a definite opinion.

Present Condition.—Slight discharge from the canal of the urethra, attributed to a gonorrhœa, which has existed for more than a month, and which is subsiding. The canal of the urethra presents along its entire extent, from the peno-scrotal angle as far as the fossa navicu-

laris a series of nodosities, which occasion the urethra to present the feeling of a chaplet. The largest of these nodules is at the edge of the peno-scrotal fold. According to the statement of the patient, these appearances commenced only three months ago, and they have been successively developed since that period.

M. Ricord attributes these kernels to a pathological state analogous to that which is found frequently in the cavernous bodies, and which he calls special plastic indurations, an affection not so rare as surgeons suppose.

In the case before us erections produce a half circle of the penis, the concavity looking downwards. When this affection is seated in the cavernous bodies, the form of erection varies according to the greater or less extent of the induration. One of the more common is that of partial erection of the penis, which does not extend beyond the corpora cavernosa. The glans penis does not participate, and hence the organ presents an appearance which M. Ricord has compared to that of a flail.

Treatment has been powerless up to the present time. At this date (the 19th of October) the patient, not finding any relief in his condition, wishes to leave the hospital. He has only been treated with a little tonic medicine. (*See also p. 56.*)

3rd Variety. It has been stated that permanent stricture of the urethra may depend upon *affections of the parts around the canal*. The most common amongst these are various inflammations of the cellular tissue, which, terminating in suppuration, occasion a loss of substance, and in healing produce cicatrices, or leave indurations which cause deviations of the canal, and diminish its calibre. In addition, it is found that the prostate, or any one of its lobes, may become enlarged; and it has been generally believed, since the days of Sir E. Home, that stricture in the deeper portions of the canal depends upon this cause, or upon abscess in the neighbourhood. It is easy to conceive how any substance which can act on the outside of the canal, or become lodged in its cavity, will be, to a certain extent, a cause of stricture. Any of the morbid states above described may exist alone, or they may become combined, and thus give rise to stricture.

DIAGNOSIS OF STRICTURE.—The occurrence of the symptoms, either alone or in combination, together with the errors which the surgeon may fall into, have been sufficiently spoken of; and it is therefore unnecessary to revert again to the symptoms by which a stricture may be detected.

The diagnosis of *spasm* complicating stricture, or what is sometimes called a spasmodic stricture, is said to be derived from the possibility of passing urine at one time of the day and not at another; from the suddenness of the attack; and from the complaint not being preceded by symptoms, which we shall presently see attend the other forms of stricture; and lastly, by the introduction of a bougie.

The diagnosis of spasmodic stricture is not so easy as some authors have imagined; Rynd, for instance, states—"When, therefore, there is complete retention of urine when a patient applies, writhing and

straining with painful and continued efforts to discharge his bladder, and yet not a drop appears, no matter what his other maladies may be, the presumption is that he is now suffering from spasm. The same opening that permitted a passage on one day should do the same on the next, or nearly so; and probably would but for the super-addition of some spasmodic action."—"On Stricture," p. 60.)

I cannot see why we should believe that this state of things may not equally be produced by congestion or local inflammation coming on in consequence of increased obstruction; and I should say it must be always very difficult, if not impossible, at least in a narrow canal, to distinguish retention caused by spasm of muscles, and that produced by inflammation of the mucous membrane.

As there are various lesions which may give rise to the affection, it is to the differential diagnosis of these, (in order that our prognosis and treatment may not be empirical,) that I now invite the particular attention of my readers.

In respect to the differential diagnosis of *vegetations* or *excrescences* on the surface of the mucous membrane, I have stated, in speaking of their pathology, that they occur most frequently at the orifice of the urethra; thus, in stricture at this point, we may suspect them to be the cause. A bougie introduced into the urethra detects an impediment; it nevertheless passes without great difficulty, accompanied by a peculiar sensation similar to what would be produced by an instrument thrust through the substance of the lung. Considerable hæmorrhage follows the introduction of the instrument, although the bougie has not made a false passage, the bleeding being occasioned by the great vascularity of the vegetations.

Vegetations may be distinguished from a puffy or hæmorrhoidal state of the mucous membrane, by the absence of that grating impression spoken of; but in both cases hæmorrhage takes place. It must still be allowed that the differential diagnosis between these two morbid states of the mucous membrane, however important, is difficult, and can only be made in some cases; of course they may be found together, and in such instances no positive conclusion can be arrived at.

The occurrence of strictures dependent upon *cicatrices* may generally be diagnosed (independently of the general signs common to all) by the bougie becoming firmly fixed in the stricture, which is with difficulty dilated, and by the fact that no hæmorrhage follows.

In cases of strictures caused by a *callous state* of the mucous membrane and surrounding tissues, no bleeding will follow the introduction of a bougie, which will be firmly held by the stricture; they yield, like the last, slowly to attempts at dilatation, and are usually situated deep in the canal, where chronic inflammation lingers the longest; we consequently find them usually in front of the bulb, and the finger may often detect them in consequence of their extent and hardness.

I cannot here pass over in silence the differential diagnosis between indurated stricture, the result of a *simple*, and that of a *specific* inflammation; for, as I have elsewhere shown, the urethra is subject, like every other part of the body, to chancre and induration of a specific nature.

At an early period, however, our diagnosis can only be a rational

one derived from the history of the case, as in both species of stricture a discharge has been observed from the urethra : inoculation, however, will at this period decide the question. When called upon for an opinion at a later period, say two months, when all discharge has ceased, our diagnosis must be based upon the concomitant circumstances, namely, the occurrence of secondary symptoms, which seldom fail to appear if the induration be of a specific nature. I have had several opportunities of observing this, as will hereafter be shown. The treatment, I need scarcely say, must be quite different as one or the other view of the subject is taken—namely, whether the induration be specific or not. (See “*Chancre in the Urethra*,” 2nd part.)

PROGNOSIS OF STRICTURE.—As regards the prognosis of stricture depending upon *vegetations*, we cannot expect a speedy cure, for the surgeon is well aware how liable they are to be reproduced even when removed, and, being situated within the urethra, their destruction is very difficult. In respect to the softened puffy state of the mucous membrane, we can usually promise the patient a speedy and permanent relief: perhaps of all strictures occurring in the urethra, this is the most easily cured.

Stricture depending upon *cicatrix* renders a cure neither speedy nor permanent; the tendency all cicatrices have to contract, in consequence of the peculiar tissue of which they are formed, is well known: but we must remember, that as a cicatrix is a permanent morbid structure, we have no dread of augmentation of the stricture if left alone, provided it does not completely close the canal. Should it narrow the calibre of the urethra, we must give a very unfavourable prognosis, as most probably it will produce disease of the bladder, and of the parts situated behind the stricture: lastly, we can depend little upon destroying the cicatrices, as we only cause still larger ones to be formed.

Of all forms of stricture our prognosis is most favourable if we are able to detect the affection in the incipient stage, when the deposit is confined to the mucous membrane, before it has become organized. We may then by judicious treatment remove the local inflammation, cure the gleet, and dilate the canal to its normal size, and may promise a speedy cure and permanent relief from future suffering. It must not, however, be concealed from the patient, that if gonorrhœa recurs, he will be peculiarly susceptible to a recurrence of a similar state of the urethra.

Our prognosis in the advanced stages of callous stricture is very unfavourable. When once organized, this cartilaginous mass closely resembles the structure of cicatrix: its elements, in fact, are the same, and it is a rebellious form of stricture. Sir B. Brodie says, “In a few cases of incipient stricture, and in some of those in which a stricture is merely spasmodic, after a bougie has been used for a certain length of time, the use of it may be dispensed with, and there will be no recurrence of the disease. But these cases are rare exceptions to the general rule, which is, that there is danger of a relapse, and that a patient who is desirous of continuing well must submit to the occasional use of the bougie ever afterwards.”—(“*On the Urinary Organs*,” 1849, p. 71.)

M. Syme, in commenting on this passage, adds, "My own experience would not lead to a statement quite so discouraging"—"but although the risk of relapse may thus be lessened (by fully dilating the stricture,) it certainly cannot be altogether prevented, and the disease too frequently maintains its hold during the remainder of the patient's life, becoming more troublesome and less manageable as age advances, so as at length to destroy all comfort by day and night, exhausting the patient's strength; and finally puts a period to his existence after a long struggle between contraction and dilatation."—"Syme on Stricture," p. 51.)

As regards *specific induration*, the local disease usually disappears under proper treatment; but it shows that the system is under the influence of syphilis, the prognosis of which will be found under "Chancre in the Urethra."

The TREATMENT OF STRICTURE necessarily follows the subject of prognosis in the order of the description we have pointed out. It, however, by no means follows that stricture of the urethra should be considered as a morbid state, in which we are called upon in all cases to have recourse to treatment. We have before stated that stricture is, in some cases, a definite termination of an affection of the urethra, and bears the same relation to it as do cicatrices to ulcers, or union by the first intention to simple wounds. The urethra may be altered in direction, or even its calibre diminished, yet provided no discharge, or inconvenience in the functions of the neighbouring parts (as, for instance, of the prostate, vesiculæ seminales, bladder &c.,) succeed, the surgeon is not called upon to treat the case simply because the diameter of the canal is slightly diminished, or in consequence of the stream of urine becoming irregular; for under such circumstances, a treatment becomes only a source of irritation, instead of a means of relief. "I am well aware," states M. Ricord, in a note to the French edition of Hunter, "that strictures are often more quickly cured in proportion as they are early treated; but this law, general as it is, does not the less admit of exceptions, particularly in that form of stricture which may be called definitive."

In short, it is only in cases which have a tendency to increase, or which interfere with the direct functions of the urethra, and those of the surrounding organs, that we should submit our patient to treatment.

Many authors, and Hunter among the rest, are of opinion that local treatment is the only one required in cases of permanent stricture; yet the more or less inflammation present, the strength or weakness of the patient, as well as various complications, may require other means than those demanded for the simple destruction of an obstacle in the canal. This will probably be the case in that form of stricture which depends upon the specific induration of chancre, and which, although usually refractory to local treatment, yields to general means employed to cure the specific disease.

Hence, then, we must divide our treatment into general and local.

The general treatment of stricture is comprised in a few words: rest and abstinence from any influence which may have exaggerated the complaint are to be strictly enjoined. In a recent acute case, compli-

cated with spasm, the first agent to be employed is a brisk purgative of calomel and jalap ; and as soon as that has acted, a warm bath. If there is reason to suspect that the urine is very acid or loaded with the lithates, some alkali should be prescribed. General bleeding is not usually necessary, nor do I place much dependence on leeches in these cases. Cupping from the perinæum, however, has received the sanction of Sir B. Brodie. The cases that present a less severe form may be treated by chloroform, and in many its effects are most marked, and superior to the slow and less efficient use of opium ; the patient's sufferings are thereby relieved, his efforts to make water cease, and the spasm and inflammation subside. I believe that, in a great majority of cases, chloroform will do more good than anything else, either alone or combined with appropriate treatment, particularly in cases in which we are about to employ instruments.

The local treatment of cases complicated with spasm, consists in employing flannel wrung out of hot water, and kept constantly applied to the perinæum, and changed as often as possible. The patient should be kept sufficiently hot to produce perspiration. As soon as the purgative has acted, I give a suppository, (see page 69) or an enema, containing at least 60 drops of laudanum.

The usual result of this treatment is that the patient falls into a doze, and on waking is able to pass his urine in a tolerably full stream. If this result is not obtained, I never scruple to pass a catheter and draw off the urine ; but I delay it as long as possible, in the belief that the introduction of instruments often aggravates the local mischief. A permanent stricture which is sufficiently permeable to allow the passage of a small bougie will often, in consequence of the use of instruments, result in complete retention of urine from inflammation. In acute inflammatory stricture the surgeon need not be in great alarm, or dread rupture of the bladder or urethra. This is not imminent until the second or third day after retention. In these cases hæmorrhage may take place in consequence of the mucous membrane being swollen and softened, but the surgeon will find no firm resistance, as in permanent stricture, and he will easily be able to follow the course of the canal, although it may be much inflamed, and he need not fear making a false passage. As soon as the water is drawn off, the sufferings of the patient cease, and the catheter had better be withdrawn, but the previous antiphlogistic remedies should be continued. Under this plan the patient will in a few hours be able himself to relieve the bladder. Should this not be the case, the catheter may again be introduced, and the urine drawn off ; but this will be scarcely ever necessary, and it would be injudicious to leave the catheter in the bladder, as it might only add to the inflammation of the canal.

When the surgeon is called at a late period, Sir B. Brodie recommends the following plan. Believing the cause of retention to be local, he would reject the warm bath and bleeding, and advises the use of the smallest gum catheter, which has been kept for a considerable time on a curved iron wire. It should be introduced without the wire, and as it approaches the stricture the concavity of the catheter should be turned towards the pubes, elongating the penis, by

drawing it out as much as possible. If this fails, Sir B. Brodie recommends us to try a catgut bougie, which failing in passing should be pressed against the stricture, and when *the patient makes an effort to pass water, the bougie should be suddenly withdrawn*: this will often be successful. These means failing, it may be possible to introduce a silver catheter, or an elastic gum catheter mounted on a firm iron stilette, into the bladder.

The treatment of each case, however, must depend upon the circumstances that present themselves, and will vary according to the diagnosis.

The local treatment above mentioned, however applicable in temporarily removing the spasmodic and inflammatory types of stricture, will not answer in the permanent forms. Here a variety of other local remedies must be employed. Amongst these must be placed *Dilatation*, *Cauterization*, and *Incision* or *Division*, which we shall here successively describe.

DILATATION.

Dilatation is, in fact, the plan of treatment the most generally applicable, and, whether employed alone or in combination with other means, most frequently succeeds.

Dilatation has been variously modified, by different surgeons in different countries, but these modifications may be summed up in the following manner—

1st. *It may be sudden.* (*Dilatation brusque* of M. Ricord.) This plan is particularly recommended and practised by M. Mayor; it consists in passing a large-sized metallic sound into the urethra; and this treatment is founded on the principle, “that the tighter the stricture, the larger should be the bougie employed.”

“The ingenious surgeon of Lausanne,” says M. Ricord in one of his clinical lectures, “uses these large sounds on the principle that small ones are liable to make false passages, whereas large instruments only tend to dilate the stricture gradually; and he further draws an analogy between the sound and the head of a child dilating the os uteri, considering that the mechanism of dilatation will be the same in both; it is unnecessary to show how erroneous this analogy is.”

In discussing this plan of treatment, M. Ricord has stated, that in some instances it is easy to pass a large sound when the stricture cannot be penetrated by a small one. Thus, in cases of spasmodic stricture, a small bougie or silver catheter is immediately stopped, whereas a large one passes without difficulty; in old people, where the mucous membrane of the canal is hypertrophied and softened, a small instrument often gets entangled, and cannot be pushed forward without the danger of making a false passage, yet a full-sized instrument is admitted.

When a stricture depends upon a slight band or septum stretched across the canal, the introduction of a large instrument will often break through it, whereas a small one will be prevented from passing; but in this case the violence done to the canal may be followed by considerable reaction, and such cases would be far better treated by incision, than by this rough handling.

But if these large bougies are useful in some cases, they certainly are prejudicial where callous stricture exists, for here the surgeon runs the risk of rupturing the urethra if he uses force ; and this actually happened in M. Mayor's practice.

I reject, then, the method as one of universal application, but nevertheless approve of it in some rare cases. I cannot, however, quit M. Mayor without mentioning to my readers a precept of that surgeon on the passing of instruments. "Introduce them," he says, "with gentleness, and when the point is in contact with the stricture, hold the instrument close to the orifice of the meatus ; by this means you may exercise a much greater pressure on the face of the stricture, and the instrument is less likely to take a wrong direction." A parting objection to M. Mayor's plan is, that this dilatation, even when it succeeds, gives rise to symptoms of considerable reaction, and abscess of the perinæum frequently occurs.

2ndly. *Dilatation* may be employed *rapidly* in contradistinction to *slowly*. It consists in passing a small bougie without employing violence, and replacing it by another of a larger size every two or three hours, in proportion as the instrument ceases to be firmly grasped by the stricture. This plan of treatment has been particularly recommended by Lallemand of Montpellier, and Professor Velpeau of *La Charité*, although many practitioners, particularly Hunter, have considered it most prejudicial.

It is true, that by this means the surgeon may cause a large-sized bougie, in a few hours, to pass through a stricture which a short time previously resisted a small instrument ; but there are many cases to which this treatment is not applicable ; particularly when there is an irritable state of the urethra, which this successive introduction of bougies will aggravate. This is, however, only one of the objections against the treatment ; the most powerful is the liability of the disease to return, for it seems to be a law in the economy of stricture, that relapses occur in proportion to the rapidity of the cure of the case. M. Ricord states that he has had under his care a patient suffering from stricture, which three months previously had been treated in this manner, and was supposed to be cured, yet a bougie of half a line in diameter passed with difficulty.

During the last few years Mr. Holt has introduced a plan of treating stricture which perhaps may properly find its place here. In a communication with which that surgeon has lately favoured me, he says :— "The treatment consists in splitting the stricture by the passage of a large tube between the blades of the dilator, and immediately afterwards introducing a catheter simply for the purpose of withdrawing the urine, and not passing any instrument for two days, when the after treatment varies with the peculiarity of the case." I have seen the operation of splitting performed at the hospital a few times, and Mr. Holt states no ill consequences follow ; but I have never seen a case in my own private practice in which I should like to employ the treatment, or which could not be readily treated by simpler and more scientific means. Although with Mr. Holt no serious consequences may have happened, I should dread this process in the hands of other less experienced surgeons.

Mr. Thomas Wakley, since the last edition of this book appeared,

has brought forward a plan of treating stricture by rapid dilatation, which he calls his tubular treatment. He first passes a guide through the stricture.—

“A guide,” he says, “consists of a hollow silver director, thirteen inches in length, straight, excepting near the end, which is slightly curved, the extremity being closed and rounded, and having an aperture at one side. A moveable handle is fitted to it, for assisting its introduction into the bladder; when this has been effected, the handle is removed, and a steel rod of the same size, five inches in length, is fixed into the external extremity of the director by one turn of a screw. This now forms the urethral director, over which the tubes are made to pass. The silver tubes are nine inches in length, and straight; the opening at the vesical extremity being bevelled off and exactly adjusted to the surface of the guides. The upper end terminates in two flanges, for being worked with the fingers and thumb.”

The successive introduction of these tubes, Mr. Wakley states, enables him to rapidly dilate the stricture. In some cases he allows the tube to remain an hour, in others he leaves a flexible one in the urethra.

“If the flexible tube be retained without exciting disturbance, it may be removed at the expiration of twelve hours after the guide has been reintroduced through it; and then, the appropriate metallic tubes having been first passed over the guide, a larger flexible tube may be introduced and retained, as in the prior instance. By this mode of proceeding, in seven days a hard cartilaginous stricture has been so far dilated that a common No. 12 sound or catheter could be easily passed; but as a rule, the safety of the patient would be best consulted by not endeavouring to obtain such a result in less than a fortnight, or from the commencement of the treatment, the more extended term allowing to the urethra a more protracted repose between the different operations.”

Mr. Wakley recommends cushions, made of Hooper's prepared india rubber, containing hot water, to be applied to the region of the bladder above the pubes, and also against the perinæum.

The rationale of the removal of the stricture is thus given:—

“My belief is, that in rapid dilatation the constant or frequent presence of an instrument induces absorption of the adventitious sub-mucous formation producing the stricture, but that in slow dilatation the action is only a mechanical distension of the contracted canal, the interstitial structures losing in length what they gain in circumference, and soon again relapsing into their previous form.”

I have had no personal experience of this plan of dilatation, but as far as my knowledge of the practice of the leading authorities in Paris and London goes, I should say that surgeons generally have of late years been gradually discontinuing the practice of rapid dilatation. In certain exceptional instances it may be required, and I can easily imagine cases in which the passing larger instruments along the guide must be highly advantageous, but I must demur to this or any other plan being considered capable of universal application.

3rdly. *Gradual Dilatation*.—This consists in passing small bougies,

(the size of which must depend at first upon the tightness of the stricture), and substituting successively larger ones, allowing sufficient time to elapse between each introduction, so that no irritation of the canal ensues; should such arise, the employment of a larger instrument must be delayed until the irritation has subsided; the surgeon may then proceed with the gradual dilatation, but, on the slightest return of inflammation, should discontinue its employment. This line of treatment is slow, but it is very successful, and a cure is generally permanent.

I think it may be asserted without any fear of contradiction, that in private practice nine-tenths of the cases of stricture that present themselves may be completely cured by this treatment. In fact, every surgeon should begin with it except under peculiar circumstances. I think I shall be borne out by the practical surgeon when I state that many of the cases reported in books as having been treated by various complicated instruments, would have succeeded as well, had they been under the hands of those who are in the habit of employing gradual dilatation with ordinary skill and judgment.

It follows, then, that great advantage may be derived from dilatation employed alone; still, it is prejudicial in cases complicated with ulceration of the canal, as well as in those depending upon bands crossing the urethra, where it tends only to cause irritation. When vegetations are present, dilatation is of no benefit. They will often, likewise, prevent the passage of a bougie, and considerable hæmorrhage will result if we persist in our endeavours. Dilatation, again, cannot be relied upon in cases where the tissues forming the stricture have become organized; in place of giving relief, it will have the effect of causing local inflammation, and greatly aggravate the case. It may be, however, employed in callous strictures of a recent date, with great advantage; but it is often difficult, *à priori*, to state whether the callous mass be organized or not. As, then, dilatation is apt to produce reaction in callous strictures of old standing, the surgeon must often be content when he is able to pass a No. 2 or 3 bougie, or resort to some of the other modes of treatment to be presently spoken of.

Another question arises,—Should dilatation be employed *temporarily* or *permanently*? Each mode of treatment has its disadvantages, as well as advantages. The frequent passage of instruments is very liable to occasion an irritation of the strictured portion of the urethra. Leaving a bougie in the bladder often tends to produce an irritation of the neighbouring organs, as, for instance, irritation of the prostate, bladder, &c. We should, however, prefer the use of temporary dilatation whenever the frequent introduction of instruments is not very difficult or painful, and when the bougie so introduced ceases to be firmly grasped by the stricture; when, on successive attempts, it can be employed with facility, and when the bougie can be easily replaced by one of a larger calibre.

Under opposite circumstances, we should employ constant dilatation, by leaving a bougie permanently in the canal. Various authors have recommended that temporary dilatation should be employed for a longer or shorter time,—none, however, give any definite opinion.

For some years I have been in the habit of introducing a bougie, which is of such a size that it becomes tightly grasped by the stricture, and ordering the patient to retain it five, ten, or more minutes; it is then to be withdrawn, and the symptoms of reaction, if any occur, will soon pass off.*

In the simpler cases no peculiar precautions are necessary; the patient need not keep in-doors, but he should not take much exercise; and for the first time or two that dilatation is employed, I forbid wine or beer to be taken on the day the instrument is introduced, but these fluids may be taken on the alternate day, and even on the same day, if no reaction be noticed; but great caution is at first required to prevent reaction. On the second day the same bougie may be introduced, and if it pass easily, the next number, which is slightly larger; the same precautions being taken. Under this treatment I have cured a great number of strictures, which have resisted other modes of treatment.

When a surgeon wishes to keep a bougie permanently in the bladder, he may allow eight days to pass without changing the instrument, provided it does not get coated with sediment, nor reaction take place.

This plan of treatment is, however, attended with some danger. Among other inconveniences, I may cite orchitis, a free purulent discharge, followed by inflammation of the neck of the bladder, and attended with frequent and ardent desire of making water, as well as tenesmus or incontinence of urine in various degrees. These symptoms apparently depend on the greater or less amount of irritability, or, as more commonly happens, on weakness or debility of the muscular fibres of the viscus. Inflammation of the bladder itself is not an unfrequent consequence of the employment of instruments left in the urethra.

Under some circumstances, ulceration or perforation of the bladder follows, particularly in those cases where the instrument presses exclusively on any particular point. In addition, however, to these accidents, sympathetic phenomena occur of a purely nervous or sometimes febrile nature; under the latter head we may enumerate, as the most common, attacks of fever, of a periodical or intermittent type, which occur or disappear according as the instrument is left in the bladder or withdrawn.

Thus employed, dilatation may act as a curative agent in one of three ways. Its beneficial influence may be exerted in the same way in which compression is supposed to act. The introduction of a bougie will mechanically empty the vessels of the engorged tissue; it will likewise excite or stimulate the parts, and cause an absorption of the effused secretion. This is what M. Ricord calls the action of compression produced by dilatation.

The *second* mode in which dilatation may act, is by occasioning

* The surgeon is supposed to be already acquainted with the fact that the patient should, previously to the passage of an instrument, be placed standing, with his back against the door, his heels close together. In some cases, however, the surgeon will have to humour the patient, particularly if he be liable to faint. I have had patients who invariably fainted for the first time or two a bougie was passed.

from the strictured surface a free purulent discharge, which will diminish the size of the swollen parts.

Dilatation may produce a *third* effect, namely, excite such a degree of inflammation or ulceration as will lead to the destruction of the stricture. There are surgeons who maintain that unless bougies have produced this effect, the cure or amelioration will be only temporary. Such, however, is a very erroneous opinion, for we must always bear in mind that ulceration will give rise to a cicatrized surface, which has a tendency to contract ; and dilatation employed so as to produce ulceration, instead of curing, will tend to aggravate the stricture.

I believe that the advantages of dilatation can only be obtained when it acts on the principle of compression, and to attain this result should be the intention of every careful surgeon.

In order that dilatation be practicable, we have hitherto supposed that the instrument penetrates the constricted parts. This necessary condition is not always easy or even possible to attain ; and in the impossibility of passing the instrument through the stricture, we derive great benefit from exercising a pressure by means of the extremity of the bougie upon its anterior part. M. Ricord states, that during the period he had the care of diseases of the urinary organs at the Hôtel Dieu, Dupuytren treated many cases with great success, by introducing an instrument every day with great care, and gently pressing on the face of the stricture ; he was contented with making slight progress daily, and ultimately the contracted point admitted the introduction of large instruments. It often required six weeks to pass a stricture, yet if no reaction occurred, and a depression was formed on the anterior part, a patient continuance of this treatment soon got the better of these obstinate cases.

Whatever be the theory that the surgeon may adopt, it is an incontestable fact, that, even before the stricture has been dilated, the evacuation of water, which at first was nearly impossible, will become easier and easier by degrees. The symptoms of retention of urine, too, which were imminent, will cease altogether, even before the instruments have reached the bladder.

Other plans of treatment have been recommended. Thus Ducamp proposed that a bougie, open at its two extremities, and of a considerable diameter, be passed till its further progress was stopped by the stricture ; through this canula, which served merely as a conductor, a smaller instrument was introduced, which he considered would dilate effectually the strictured part.

It may be asked, in employing dilatation, either permanently or temporarily, is it necessary that the instrument should enter the bladder ?

When the stricture exists in the spongy part of the urethra, and the surgeon proposes merely to employ temporary dilatation, it is of course quite unnecessary to pass the bougie into the bladder ; when, on the contrary, the instrument is to remain, its point should be introduced into that cavity : and in order to prevent the occurrence of inflammation or irritation, a well-curved catheter should be employed, which has been made for the purpose, as it retains its form better

than instruments which have a curved direction given them, simply from containing a stilette.

At the present time, few authors are agreed upon the instruments by means of which dilatation should be performed; each practitioner has his pet instrument, which he uses probably with a dexterity that will prevent him from trying others with which he is less familiar. To such my observations are not addressed. The young surgeon who has not yet decided what instrument he shall use, should try the flexible conical, or bulbed bougies, delineated in the adjoining wood-cuts.

I have been in the habit of employing them for some years with the best results. Their merits are well stated in the following passage from Ricord:—

“When the surgeon is called upon to treat a stricture which is tight, and which can only be passed by a small instrument, conical bougies made of a supple material are by far the best, and to be preferred to all we have previously alluded to, and so far favour the introduction, that they pass those strictures with ease which impede or render impossible the passage of cylindrical instruments of a smaller size; conical bougies form more easily than others that infundibuliform impression on the face of the stricture, and they insinuate themselves gradually into the strictured part, when gently directed and pushed; besides, their use is accompanied with less suffering to the patient than that of cylindrical instruments of the same size. Indeed, if my personal experience in a large hospital had not taught me the immense importance of the employment of this shaped bougie, the opinion of Dupuytren would suffice to recommend it in opposition to those surgeons who pretend that the employment of conical bougies is now generally abandoned.”*

“Provided bougies are either cylindrical or conical, when they are of a certain calibre, it is impossible to prevent their fatiguing the sound parts of the canal, as I have before remarked, especially the meatus and that portion of the canal which corresponds to the *glans*. To obviate this inconvenience, surgeons have employed fusiform bougies, or, as they are called in France, *bougies à ventre*, and which Ducamp has especially recommended. These bougies have the undisputed advantage of only dilating the strictured portion. The principal objection that has been made to them—namely, that they pass the

Conical bougie.



Bulbed bougie.



* These instruments I obtain at Charriere's, in Paris. In very tight cases of stricture I employ the conical bougie, figured in this page, but when a No. 6 will pass, I prefer using the bulbed instrument. Its advantages are manifold; the

meatus with difficulty, and that they necessarily do violence to the parts which they come in contact with—is untenable; the utmost volume of their enlarged portion ought only to have a diameter equal to that of the cylindrical bougies which the surgeon would employ in similar cases. With ordinary precautions the meatus will be dilated only for an instant, while the fusiform bougie passes; this will be much more readily borne than the old plan of allowing an instrument of an equal volume throughout to remain permanently dilating the canal.”*

Surgeons generally employ flexible bougies; some practitioners prefer those made of wax. Although, however, wax bougies have the advantage, when they are properly made, of receiving an impression of morbid lesions of the mucous membrane, or of moulding themselves to the natural or artificial curvatures of the canal, it often happens that, in employing them, the operator finds that they are either too firm for some patients, or else they do not offer sufficient resistance, and he is obliged to make several attempts before he succeeds in getting through the stricture. They are also liable to become soft from the heat of the parts. I may mention that Sir B. Brodie prefers the wax bougie; he states that this preference arises from a wax bougie retaining its bent form, whereas an elastic one has a tendency to regain its straight direction, and hence is not well calculated for being passed along the curved canal of the urethra.

“For my part,” says M. Ricord, “I prefer gum elastic bougies, although, latterly, practitioners have again introduced metallic instruments. I am well aware that their trifling weight adds nothing to the ordinary dilatation, as performed with milder and more easily borne instruments; but I would take care not to stigmatize, as some have done, with charlatanism, certain persons who recommend inflexible instruments as simple and economical in hospital practice, since patients can without danger employ them; a fact of some importance, when the case requires only occasional passing of instruments to maintain the cure.”

I have previously mentioned the advantage of combining the proper and judicious employment of injections with dilatation. I believe that in cases of stricture, as well as gleet, local applications of an astringent lotion, may be most beneficial in checking subacute inflammation, and restoring the urethra to a healthy condition, particularly when they are combined with the employment of instruments. This combination of injection and dilatation becomes almost a necessity, when we have to treat strictures that bleed freely or are very irritable. Injections effectually employed may, probably,

instrument passes with less pain, does not catch in lacunæ, but slides along, giving no uneasiness. When I have not had at hand the bulbed bougie, and have passed a pointed one, the patient has usually found out the difference. They are made of india-rubber, and are beautifully elastic, and yet sufficiently firm not to bend. They last a long time, and wear out by getting cracked, as they become slightly bent in passing the membranous portion of the urethra. To avoid employing an injured instrument, the finger should be passed along the bougie previous to the introduction of the instrument, for the least inequality of the surface will irritate the delicate mucous membrane. The instruments should be kept in a case, and not bent. Even when carried in the crown of the hat, or the breast-pocket, they become damaged.

* This is a form of bougie that I must admit I seldom use in private practice. I have not found any difficulty or danger arising from gradually increasing the size of the conical bulbed bougie.

almost entirely supersede caustics, which have been often used to alter the structure of the part. Dilatation and injections will frequently answer all needful purposes as well as escharotics, without producing any such mischief as the latter often do.

Consequences of Dilating the Stricture.—Dilatation and its concomitants are not invariably successful. Some ill consequences, too, will sometimes follow; such as orchitis, inflammation of the prostate and bladder. In other instances, the patient will suffer from shivering fits, and in some cases rheumatism of the most severe and formidable character will come on, thwarting all the effects of dilatation, which must be laid aside until these complications have subsided.

The treatment of shivering is very simple. A patient should be sent to bed, or covered warmly, and bidden to lie on a sofa, taking warm diluents with a little brandy, and the cold stage will soon pass off, although at first it frightens the patient. In one case the patient attributed the shivering to walking after the introduction of the instrument, although I set it down to employing a size much larger than the preceding. In this case dilatation was nevertheless persevered in, and no recurrence of the shivering took place.

In cases where we expect the occurrence of shivering, or if previous attempts at dilatation have been followed by accesses of fever, the best course is to administer quinine in considerable doses; say, five grains an hour before passing the instrument. This precaution will usually prevent the occurrence of the shivering.

Such occasional ill consequences must not, however, deter the surgeon from treating patients on sound principles of surgery; they should only make him more cautious in employing remedies which the patient should be told will occasionally give rise to these complaints, unless precautionary measures are taken, and he be warned against committing excesses.

We have hitherto spoken of dilatation as it may be advantageously employed *alone*; but there are various cases in which it is not only incapable of producing benefit, but tends to aggravate the complaint; in such instances it may frequently be combined with other plans. One has been mentioned—viz., its combination with injections. Another most important combination is that with escharotics.

CAUTERIZATION.

Its employment is not of modern date. Alphonso Ferri is one of the early surgeons who used it; and Ambroise Paré states that he obtained several remarkable cures by cauterization, previously to which he destroyed the hard carnosities. Loiseau, it is well known, cured Henry IV. by means of cauterization, although the operation was attended with accidents of such a severe nature that he was tried for *mala praxis*.

Latterly, in France, it has been employed, in consequence of the eulogium passed on it by Ducamp, by Lallemand of Montpellier, Amussat, Segalas, and others. In England, in spite of the approbation of Hunter, Charles Bell, and Whately, it has fallen into disrepute, which is not surprising, when a remedy such as this has become the crotchet of individuals, who pretend that it is applicable to all cases and every stage of stricture.

If the surgeon think this, he will be disappointed. Cauterization used indiscriminately, will prove more frequently injurious than beneficial. But if it be employed with discretion, in cases which call for and are adapted to its use, it becomes not only a means of cure in itself, but is likewise a very good adjuvant to dilatation.

It is under these circumstances that a spasmodic stricture yields to a superficial cauterization, employed, not for the purpose of destroying the tissues, but simply with the object of modifying their vitality. In the same manner, strictures, accompanied with ulcerations, or depending on granulations seated on ulcerating surfaces, or on fungous masses, or on a softened hypertrophied state, or simple tumefaction of the mucous membrane, will be cured more rapidly and effectually by cauterization alone, or combined with dilatation, than by the latter treatment only.

If, however, the caustic be employed to destroy cicatrices, which will inevitably be replaced by others of a still larger extent; or if it be used in those hard callous strictures in which resolution is impossible, far from ameliorating the state of the part, it will only aggravate it, and retard or prevent a cure, which other means more adapted to the case might probably have brought about.

Hunter only advised cauterization in cases where the surgeon is unable to pass the obstacle; hence, according to his views, the caustic could only be applied to the face of the stricture. On the other hand, Ducamp and his school recommended the employment of the caustic only in those cases where the stricture is pervious, and thus allows the application of the substance to its parietes. Of the two methods, I prefer the latter, whenever it is practicable. The stricture should be previously dilated to a certain extent; for although the effect of caustic be that of destroying spasm, and although it may act as an antiphlogistic, it is no less certain that its application is sometimes followed by inflammation and swelling, or hæmorrhage even may result, and occasionally a shreddy secretion will follow and give rise, like the eschars which it determines, to an obliteration of the strictured point. According as these accidents are more or less severe, so we may experience a difficulty in passing instruments. In a note upon this subject, M. Ricord states, that he thinks the following directions may be laid down for the employment of caustic.

1st. The surgeon may feel himself called upon to cauterize directly from before backwards (Hunter's plan) whenever the stricture allows urine to pass, and yet offers a resistance to the introduction of instruments, however small, or however well directed.

2ndly. The interior of the stricture should be cauterized wherever dilatation has been employed without success; when but little progress has been made; when inflammatory action comes on; or when the case gets worse under our further endeavours to increase the dilatation.

M. Ricord is not in the habit of employing cauterization before a bougie of three lines in diameter passes. Some might be induced to think that when a bougie of this size passes, it is unnecessary to cauterize; but as I have just observed, such is not the case, and practice contradicts the supposition. I have seen cases where a bougie of four lines in diameter passed, and yet suppuration continued, which was only checked by one or two applications of nitrate of silver.

It has been a favourite opinion, and one that has been much acted upon, that caustics are endowed with a species of intelligence, attacking only such parts as are the seat of the disease. This opinion is much exaggerated ; still, from what is observed on the prepuce, when vegetations are cauterized, we can easily believe that if a stricture depend on these substances, they act the part of a sponge imbibing freely the caustic. In cases, however, where no vegetations are present, the sound parts will not remain unaffected by the caustic.

Strictures may be cauterized by a variety of substances ; thus, Hunter employed the red precipitate, or the sulphuret of arsenic. M. Jobert has greatly extolled the use of calcined alum. He did not find it produce any of the inconveniences attributed to caustics. M. Ricord states, however, that he has employed it, and he found that the powder fell out of the little cup and collected around the meatus : and he attributes the great number of cures said to have been effected by this treatment to sympathy, and not to any direct effect of the calcined alum ; the instrument was modified, but the powder, in passing along the urethra, became hard, and failed in its object. The most serious objection to this plan, says M. Ricord, is the great tumefaction it occasions. A patient was placed under this plan of treatment, and the stricture dilated so much that a bougie of three lines in diameter passed. Two hours afterwards, we were called on account of a retention of urine, and with difficulty were we able to pass a catheter ; thus, in spite of all the praises lavished upon it, this treatment is not without danger.

Of all the preparations which I have tried, no one, I think, possesses such decided advantages as the

NITRATE OF SILVER.—Differently constructed instruments have been used in its application, which it would be useless for me to describe, in what is rather a practical treatise on venereal diseases than one which professes to give an account of the various treatments which have been proposed.

When I am desirous of employing cauterization from before backwards, I introduce a small-sized silver canula, which encloses a stilette armed at its extremity with a little cup. As soon as the canula is in contact with the stricture the little cup containing the powder of nitrate of silver, which has been melted by submitting it to the flame of a spirit lamp, is made to project, and thus the part is cauterized.

I have employed this treatment many times with the greatest success. And it is particularly applicable to a stricture situated in front of the bulb, when we have not been able to get the smallest bougie through the stricture ; one application of the caustic often suffices and a large bougie can be passed and a cure speedily takes place.

To apply the instrument, the canula must be first introduced, containing a bougie which is exactly adapted to it, in order that no mucus may get entangled in the opening. When the canula is in front of the stricture, the bougie is withdrawn and replaced by a stilette, containing, at its extremity, the little cup of nitrate of silver ; and as the stilette is hollow, a very fine bougie is passed up it, and enters the stricture.

In order to cauterize the parietes of a stricture, I can strongly recommend the instrument of Lallemand as the simplest, and the one which best fulfils all the indications. It is composed of a straight or

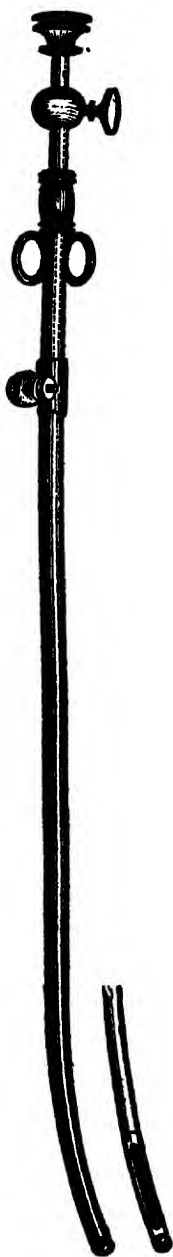
Porte caustique.
Lallemand's.

curved silver canula, as seen in the adjoining wood cut, containing a *porte caustique* fixed on a metallic stilette, which is made spiral, in order to permit the rotation of the instrument. The instrument is passed beyond the strictured surface, the canula is then withdrawn, and the nitrate of silver thus left exposed to the parietes of the stricture, and may be turned in any direction desired. The *portes-caustiques* of M. Lallemand are of different sizes, according to the greater or less tightness of the stricture.

Many modifications have been tried, but they have all again merged into the old instrument.

Authors have differed in their opinions as to the time that the caustic should remain in contact with the stricture. Hunter considered one minute the proper time; but when we remember the various lesions to which the caustic can be applied, we may find one minute too long, or not long enough. With Lallemand's instrument I am in the habit of making one or two turns, so that no more time be occupied than in cauterizing in gonorrhœa præputialis, as it should be our object to touch superficially the parts, and not to destroy the tissue. So employed, nitrate of silver is among the best of our antiphlogistic remedies. It may be necessary, it is true, to reapply the caustic, but there is no difficulty in this; when a first cauterization is attended with little effect, you may generally suspect vegetations to be the cause.

No absolute rule can be given as to the necessity of re-applying the caustic; if the case goes on favourably, it will be useless to have recourse to a second application, but if no amendment is observed, it may be employed again in a few days. In books it is stated that we should wait for the separation of the eschars; but they may come away during the night, or unobserved: again, if they are attached by any one point, some time will elapse before they separate, and the vegetations may have time to spread again. Cauterization is usually followed by pain in making water, accompanied with a slight swelling of the membrane; the discharge, at first often sanguineous, takes on a muco-purulent character. These symptoms having passed, and the stricture not admitting the instrument, we reapply the lunar caustic; if, on the contrary, a bougie now passes with ease, a second application of caustic is unnecessary, and the patient is soon cured. If, after having made a certain progress, the stricture remain in *statu quo*, we



should again have recourse to cauterization, guided by principles which will readily occur to every practical surgeon.

POTASSA FUSA as a treatment of stricture has latterly been much discussed in the medical journals, and I therefore think it necessary to make a few observations on its value as a remedy.

My own experience in the treatment of strictures with this preparation has been very limited. I have derived so much benefit from the nitrate of silver in all cases in which I felt justified in employing caustics at all, that I have not had personal opportunities of testing its supposed merits. The history of the remedy and the opinions on its action have been such that in private practice I should be very cautious in its employment.

With hardly an exception, the verdict of the profession has been against it. Sir Charles Bell, who from his extensive practice must have had ample opportunities of being acquainted with its effects when it was a popular remedy in the hands of Whately and Sir E. Home, in his third letter on Stricture, page 75, *et seq.*, gives the results of his experience, and relates experiments which he made with the caustic alkali, fully, I think, bearing out his conclusions. "That when a small portion of it was inserted into the end of a bougie, it became, even during that operation, moist and soft by the absorption from the atmosphere; and that further, when the point of the bougie thus loaded was dipped in oil, or covered with soap, the caustic was rendered mild; and by the time it was carried through the urethra to the stricture, it was little else than a liquid soap, with a large proportion of alkali."

When larger portions were used, sloughing, hæmorrhage, and abscesses occurred, as a perusal of the books treating of stricture, and published at the period when the remedy was in vogue, will show. The whole subject has lately been forcibly brought before the profession in the treatise by M. Reybard, on the Urethra,* who passed caustic down the urethra of six dogs, producing the usual effects, and in three he found the contraction very marked; in the three others he attempted to prevent contraction by the employment of bougies, introduced on the eighth day after cauterization (the period when contraction commences), but the resilience of the contraction was so great that he failed in curing the stricture, and, on examination after death, in place of the mucous membrane which had been destroyed by the caustic, the tissue of the cicatrix was found redder, and the surface more shining than in the adjoining mucous membrane. It was dense, very resisting, and by no means extensible, as was shown by fruitless attempts to dilate the stricture before and after death. Hence he assumes that cauterization only destroys one stricture to substitute another more extensive, more complete, and more severe.

Notwithstanding these unfavourable reports, I have made every inquiry to ascertain if the surgeons who now employ the alkali have improved on the old plan of using the caustic. I find that a portion is still attached to the point of a wax bougie, and thus carried down to the stricture. From my long personal experience on the use of potassa fusa in the treatment of ulceration of the neck of the

* *Traité Pratique des Rétrécissements*, page 55, *et seq.*

uterus, I know the precautions which I am compelled to take in cauterizing the os uteri; a pledget of lint dipped in vinegar is absolutely necessary to be placed immediately beneath the part we are about to cauterize, to prevent the deliquescent alkali acting on and destroying the structures it may come in contact with; and with these precautions, even when the speculum is introduced, it is very difficult to obviate the danger. Now what must be the consequence in the urethra,* if the caustic employed should be used in quantity sufficient to destroy stricture? and if smaller proportions only are employed, with Sir Charles Bell we must believe it to result in little more than a liquid soap, giving a certain lubricity to the urethra.

Sir B. Brodie makes the following forcible observations on the employment of caustic:—

“Notwithstanding what I have now stated, I very rarely use the armed bougie in my own practice, and I never resort to it in the first instance. My reasons for preferring the other methods of treatment in ordinary cases are these: 1st. Although the caustic often relieves spasm, it also very often induces it. It is true that in many instances also it brings on a severe retention of urine. 2ndly. Hæmorrhage is a more frequent consequence of the use of the caustic than of the common bougie, and it sometimes takes place to a very great, and to an almost dangerous extent. 3rdly. Where there is a disposition to rigors, the application of the caustic is almost certain to produce them; and frequently the application of the caustic induces rigors, where there had been no manifest disposition to them previously. 4thly. Unless used with caution, the application of caustic may induce inflammation of the parts situated behind a stricture, terminating in the formation of abscess. I have known some cases of abscesses formed under these circumstances, which, from their peculiar situation, have proved more troublesome and more difficult to manage than the original disease.” (“On the Urinary Organs,” p. 63.)

Mr. Syme in equally strong terms deprecates the use of the caustic alkali, and in the following words calls in question the *good faith* of surgeons who advocate the treatment:—“On the whole, it seems more reasonable to conclude that in the cases of alleged cure by caustic, there was no real stricture in existence, than to suppose that so improbable, or rather impossible an achievement had been accomplished.” (“On Stricture,” p. 53.)

Cauterization appears on the whole to be going very much out of use, more especially since medical men have paid greater attention to dilatation and incision. In my own practice I find that I now (1860) rarely meet with cases that require cauterization, or which cannot be better treated by the other plans. I have, however, thought it well to mention the subject, and the various reasons that have been advanced for the employment of caustics.

INCISION OR DIVISION OF STRICTURE.

Incision is not a novel introduction, as mention is made of it before

* This danger is borne out by the following observations of Sir B. Brodie:—“Whenever the caustic is frequently employed, you are in danger of creating a false passage, in consequence of the dissolved caustic flowing to the lower part of the urethra, and destroying the parts unequally.” (“On the Urinary Organs,” p. 62.)

Hunter's time, although he gives no opinion upon it. Of late years it has been revived by M. Amussat in France, and still more recently the instruments have been greatly modified in England by the late Mr. Stafford.

The stricture may be incised in one of three ways : 1st, by puncture from before backwards ; 2nd, an instrument may be *introduced* into the narrowed canal, and its *parietes* can be slightly scarified in various points ; or 3rd, the stricture may be cut through from *without*.

The first plan, which may be called *puncture*, has been proposed in cases where we are unable to pass any instrument through the stricture, and is now rarely had recourse to.

The second operation, which may be called the division of stricture, may be performed from *within* the urethra.

The third method is known as the *perineal section*.

The division of stricture from within the urethra has been latterly very considerably modified by M. Ricord, whose plan of operating I first witnessed in 1855. The cases in which these operations for division of stricture, have been thought advisable are ribbon strictures, alluded to at page 84, as well as those forms of the complaint which resist dilatation. Cases are met with from time to time in which the stricture is formed of such an elastic substance, that on leaving off the employment of the bougie, the diameter of the canal contracts to its smallest size ; hence, the necessity of dividing this peculiarly hard and india-rubber-feeling mass by longitudinal incisions. The Institute of Paris a few years ago considered the treatise of M. Reybard on this subject to be so excellent, that it gave him the Argenteuil Prize of 10,000 francs. In that work he enunciated the principle, that longitudinal incisions ought to be made through the substance of the stricture, in order permanently to cure this form of complaint. Those surgeons, nevertheless, who admit to a great extent the correctness of his views on the pathology of stricture, have found great fault with the instruments employed, and various forms have been in consequence devised for the more certain and effective internal division of the narrowed canal.

M. RICORD'S METHOD.—Of the first case which I witnessed in the wards of M. Ricord, his interne, M. Nassans, has kindly furnished me with the history.

Frederic C—, aged thirty-four years, of good constitution, admitted into M. Ricord's wards on the 10th of October. Has not suffered from chancre, but about five years since contracted gonorrhœa, which he treated with injections, of the composition of which he was ignorant. In consequence, violent inflammation of the perinæum came on, followed by urinary abscess and fistula, which allowed the urine to escape during the following two years ; but the fistulous openings then closed, with surgical assistance.

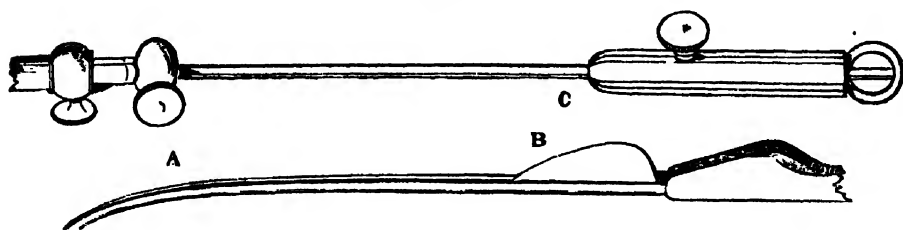
This patient remained well until the present year, 1855, when, in the month of April last, he was attacked again with gonorrhœa, which caused the same train of symptoms as on the former occasion. An abscess in the perinæum ensued, followed by fistula, which was treated in the country ineffectually, and the patient noticing that

almost all the urine passed by the perinæum, determined to come to Paris to seek the advice of M. Ricord.

Present State.—There is a perinæal fistula, of small extent, by which the patient passes urine freely, but he complains that it comes in a small stream, and in a cork-screw form, from the canal of the urethra. M. Ricord examined the urethra with his instrument, which he calls *explorateur a boule*. (See olivary bougie, p. 75.) No. 14 entered, but with difficulty, and allowed the professor to determine that a strong bridle stricture existed, situated at fifteen centimetres from the meatus. After several days' perseverance in dilating the stricture, without satisfactory results, M. Ricord determined to divide the stricture with his coarctotôme, which cuts from before backwards,

RICORD'S COARCTOTÔME.

FIG. I.



As may be seen in the above engraving, there is at the extremity of the instrument, a conductor, A, of a size sufficiently small to pass through the stricture. This, it will be seen, is slightly curved; on the under side of this runs a channel for the little knife to traverse. At the extremity it represents a thick terminal sheath, within which the blade of the knife is protected when passed down the urethra.

Figure C shows the handle of the knife which causes the blade, marked B, to be protruded either backwards or forwards from the sheath, when the surgeon is desirous of dividing the stricture.

October 17th.—In the case before us the meatus was so narrow that M. Ricord divided the urethra by a little instrument he uses for that purpose, to enable the coarctotôme to pass readily. Taking the instrument in his right hand, he introduces the stilette, marked A, into the urethra, down and through the stricture. The thick part of the little coarctotôme is now in face of the stricture, and by pushing forward the knife, B, it must necessarily pass through it, and divide it entirely without unnecessarily injuring the surrounding parts. The knife is now to be withdrawn into its sheath, and attempts made to pass the thicker portion of the instrument through the stricture; but if it is a very callous one, this will not usually succeed. If the surgeon examines the instrument carefully, and considers the structures which he is called upon to cut through, he will, I think, be not surprised if the thick portion of the instrument should not follow. It may be well to make the attempt, but I cannot think a medical man will often succeed, any more than were the operator to take a piece of gristle, and force a thin knife through, he could expect that a large instrument would follow the knife. I mention these circumstances, otherwise disappointment will necessarily immediately follow the operation, whereas some time must occur in callous strictures before good-sized instruments will readily pass through the obstruction, which only gradually becomes absorbed.

The entire instrument is next to be withdrawn, and a gum-elastic catheter, with an olive-shaped extremity, and similar to the one shown in the adjoining wood-cut, is to be introduced.

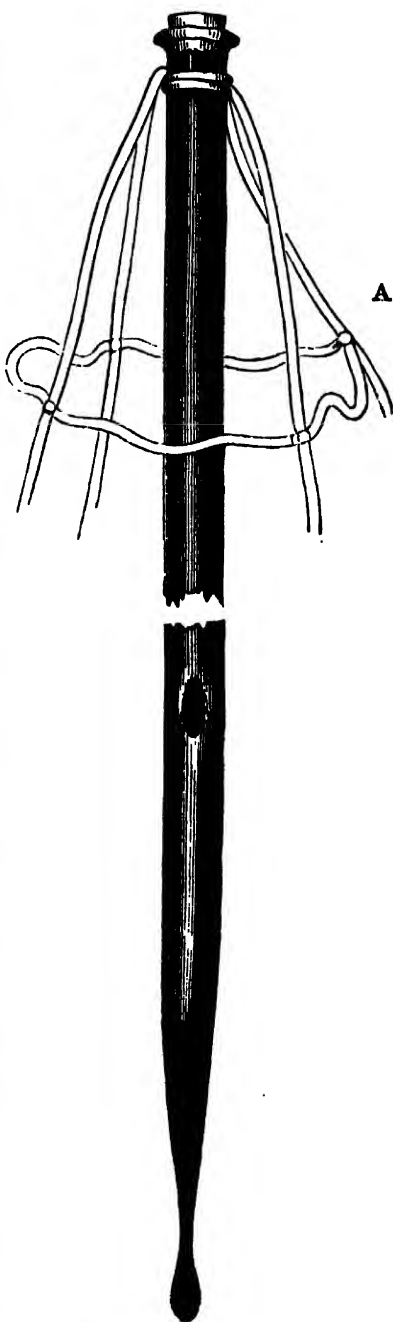
This elastic catheter, with an olive-shaped extremity, is an instrument I had never seen employed in England; and yet it is an excellent addition to our instruments. Its being made of gum-elastic is very desirable, as it bends to the form of the canal; and at its extremity from its form is not liable to be caught by the little irregularities or folds of membrane which present themselves along the canal, and the instrument passes readily; lastly, it is not so liable to irritate the walls of the bladder when left in that organ. M. Ricord prefers leaving a moderate-sized catheter in the bladder, as experience tells him that should this not be done, the first time a patient micturates, and the urine comes in contact with the cut surface, shivering occurs, which has sometimes proved fatal, and which is averted by this treatment. On the fourth day the catheter is withdrawn. He also takes the further precaution of giving the patient a large dose of quinine (ten grains) before the operation, and repeats it again in the course of the evening, as a further means of preventing shivering.

The operation in this case was performed with the loss of only a few drops of blood, and this came apparently from the incision in the meatus.

Oct. 18th.—Yesterday was passed without fever, hæmorrhage, or shivering. Another dose of quinine was administered last night, and the patient kept on low diet. He slept little on account of the instrument. The patient allows the urine to flow out about every two hours; his tongue is moist.

19th.—Slept better last night. To leave off the quinine, as there has been no shivering; in all respects going on well, and he is allowed a more generous diet; there is no pain in the perinæum; to sponge the perinæum with warm water.

FIG. 2.

*Bulbed elastic catheter.*

20th.—The patient having been disturbed by the bandage which attaches the catheter to the body, it was removed, as well as the elastic catheter, and another introduced; a good deal of discharge followed. He states that last night, owing to the frequent efforts to micturate, urine escaped by the fistula. This is to be accounted for by the irritation occasioned by the instrument. M. Ricord fixed the catheter by attaching two pieces of cotton string to the end of the catheter; and then, by a cross-piece, ties their four ends, and connects them to the suspensory bandage, avoiding all constriction, and yet keeping the instrument firmly in the bladder. (See woodcut, p. 111, Fig A.)

I should mention, that after employing the coarctotôme, it should be taken to pieces and carefully wiped. Particular care should be taken to run a piece of wire along the canal conducting the little knife, as moisture is apt to lodge there, and the novice is likely to lose the little screws which form part of the instrument, unless warned to be careful.

That incision or some modification of it is the only feasible plan of treating some forms of stricture may be judged of from the following case.

A gentleman of middle age called upon me, stating that he suffered from incontinence of urine. He was a married man, the father of several healthy children. On examining him, I found the prepuce oddly attached to the glans, arising apparently from phymosis having existed in early life. On asking him to pass urine in my presence, I found the stream very small and sluggish. The introduction of an instrument was very difficult; it was almost impossible to pass the smallest elastic bougie, and after proceeding an inch and a half, another obstruction presented itself.

The patient states that before marriage he had gonorrhœa, which he neglected, and its cure had been very tedious. The stream of urine has been gradually becoming diminished, and he is often called upon to micturate, although he can occasionally hold his urine eight hours. The primary obstruction appears like a membrane stretching across immediately within the meatus, and no hardness can be felt along the canal. As an operation is the only chance of relief, the patient is to call in a few days.

I placed the patient in a good light, and proposed to divide the meatus, which was very narrow; but this the patient greatly objected to, so I promised to attempt to operate on the first stricture, which I could see just within the meatus, lying like a curtain across the canal, with a very small pin-hole aperture. I withdrew the knife from Ricord's instrument (seen in the last woodcut, page 110), and with some difficulty introduced the point against, rather than through, the curtain, as I found it presented little resistance. After dividing the stricture, and passing a bougie, I discovered another stricture an inch behind the meatus. I now found that the narrow opening at the meatus was dilatable, and introducing the coarctotôme again, I divided this stricture also, and passed a tolerably-sized bougie, which, however, I did not leave in the bladder. In the evening, I again passed the bougie, to prevent cicatrization, and again at prolonged intervals. The patient, after having been worried for many years in micturition, passed urine in a stream that surprised himself. There has been no return of the complaint to my knowledge.

In all the cases I have yet seen, no unfavourable symptoms have occurred, and I think that the internal incision of stricture, as executed in the present day, is a valuable acquisition, and deserves to be employed more generally than it is, perhaps not as superseding, but as a valuable adjunct to, dilatation.

THE EXTERNAL DIVISION OF STRICTURE, OR PERINEAL SECTION.—Mr. Syme has proposed division of the stricture through the perinæum in cases which admit the passage of a sound. His mode of procedure is the following :—“ If the patient has a great deal of pain, and wishes to escape from the slight degree of it which attends the requisite incision, he should be placed under the influence of chloroform ; not partially, so as merely to suspend his consciousness or impede his recollection of suffering, but completely, so as to prevent any restlessness or unruly struggle, which would tend very seriously to increase the difficulty of the procedure. He should then be brought to the edge of the bed, and have his limbs supported by two assistants, one of them standing on each side. A grooved director, slightly curved, and small enough to pass readily through the stricture, is next introduced, and confided to one of the assistants. The surgeon, sitting or kneeling on one knee, now makes an incision in the middle line of the perinæum or penis, wherever the stricture is seated. It should be about an inch and a half in length, and extend through the integuments, together with the subjacent textures, exterior to the urethra. The operator then taking the handle of the director in his left, and the knife, which should be a small straight bistoury, in his right hand, feels, with his forefinger guarding the blade, for the direction, and pushes the point into the groove behind, or on the vesical side of the stricture, runs the knife forwards so as to divide the whole of the thickened texture at the contracted part of the canal, and withdraws the director. Finally, a No. 7 or 8 silver catheter is introduced into the bladder, and retained by a suitable arrangement of tapes, with a plug to prevent trouble from the discharge of urine.

“ The process having been thus completed—which it may be, in less time than is required for reading its description—the patient has merely to remain quietly in bed for forty-eight hours, when the catheter should be withdrawn, and all restraint removed. The urine sometimes maintains its proper course from the first, but more frequently passes in part through the wound for some hours, or it may be a few days. No attention or interference is required on this account, but at the end of eight or ten days a moderate-sized bougie should be passed, and repeated once a week or fortnight for two months. In most cases the cure may then be deemed complete and lasting. But if the tendency to contraction should have been extreme, or if the patient's way of life should be such as to favour the reproduction of stricture, it will be a prudent precaution to have the bougie passed four or five times in the course of a year, in order to avoid all risk of further trouble.”—(“ Stricture of the Urethra,” p. 43.)

Mr. Syme adds, “ Of all the cases in which I have divided the stricture, only one has been followed by any unpleasant result ; viz. erysipelas of the perinæum, extending over the whole surface of the

body, accompanied by constitutional disturbance so violent as to prove all but fatal.”—(P. 40.)*

The cases in which Mr. Syme would operate are as follows:—“There are,” he says, “two forms of stricture, in which mere dilatation has been found inadequate to afford relief. In one of these, the contracted canal is so extremely irritable, that the introduction of an instrument aggravates instead of alleviating the symptoms, and exposes the patient to various dangers from the local and general disturbance thus excited. In the other, the peculiarity consists in a contractile tendency so strong as quickly to counteract the effect of dilatation, and thus render it useless.”

Since the division of stricture from the outside was first advocated by Mr. Syme, very opposite opinions have been entertained as to the dangers attending the operation, as well as the probability of relapses. In private practice cutting down on a stricture is not often necessary, as other means are usually applicable. In hospital practice, however, it would appear that the state of the case is different; and it seems from some very careful and laborious statistics collected by Mr. Thompson, that there the mortality has not been so great as has been supposed, and that relapses of the complaint have not been numerous, but, on the contrary, the cure has been usually permanent. Mr. Smith, on the other hand, has more recently collected a large number of facts, many of which have fallen under his personal observation, in which he graphically describes the consequences of this operation, and places before the profession the view which London surgeons entertain on the subject; and at page 239 he sums up the main objections to the operation, as *unnecessary, inefficient, and dangerous*. It will be seen that there have been relapses of the complaint after this operation, as after other ones. Cases are given, proving that danger and death do sometimes attend perinæal section, and that the mischief in the perinæum has sometimes never been remedied, and a fistula in the perinæum has been added to the patient's other ailments. It must be admitted, however, that in many instances startling cures have been effected by the operation. Nevertheless, the prudent surgeon in private practice will be very cautious as to performing this operation, except under peculiar circumstances. It would appear as if the danger was greater in proportion as the perinæum is in a sound state, the operation succeeding best when disease has changed the natural condition of the perinæal structure—and these are just the cases that will most probably require the operation.

On the whole, I have come to the conclusion, that dilatation is the usual and best plan for treating stricture even now; that it is generally successful in careful hands; that the cases are few in which the surgeon is obliged to resort to incision; but at the same time it is admitted that there are cases calling for operation, which, however,

* Since the above was published, Mr. Syme, in the *Edinburgh Monthly Journal*, recommends great care not to divide the deep fascia of the perinæum, lest extravasation occur; he likewise recommends that the incisions be made exactly in the mesial line of the perinæum. He also advocates the complete division of the stricture, but takes care not to extend his incision beyond it.

should not be decided upon without due consideration, and after the failure of other means. If a patient can, with tolerable ease, bear a moderate stricture, it is better to do so than be operated upon, as experience has not yet discovered a radical cure for stricture, notwithstanding all that has been said to the contrary; and sad experience, in London and Paris, has convinced the profession that the operation, as hitherto performed, is not free from dangers, such as hæmorrhage, purulent absorptions, fistulæ, &c.

I may mention, that the perinæal section of strictures has met with little success in Paris. M. Ricord told me that he operated in this manner as seldom as possible; and since my return to London, I have seen a gentleman who came to town to consult the profession as to whether he should submit to the operation recommended by a distinguished northern surgeon; the unanimous opinion in London being that, as a good-sized bougie could be passed, he had better be contented, and not run the risk of the operation. I may further mention, that I quite concurred in these opinions.

IMPERMEABLE STRICTURE.

Hitherto our descriptions have applied principally to such cases as admit the passage of instruments through the contracted canal. It occasionally, however, happens in practice that we are unable to introduce the smallest instrument. We have now, therefore, to discuss the treatment of impermeable stricture. Impermeable stricture may exist both on the living and on the dead body. Mr. Thompson, in his recent Jacksonian prize essay, calls attention to three preparations in the Museum of Guy's Hospital, in which the closing of the canal is complete. The same author alludes to a case he witnessed under Mr. Syme, in which there was traumatic obliteration of the canal, and which was not benefited by the operation. On the authority of Mr. Cadge, it is stated in the *Medical Times*, that the late Mr. Liston was foiled several times in his attempts to pass instruments into the bladder, notwithstanding his assertion made earlier in life, "that there are no strictures impassable that I have seen; for when any water comes away, you can by patience and perseverance get a catheter through sooner or later."

This form of stricture becomes, however, every day less and less frequent; but there are cases in which the fact of its possible existence grievously adds to the surgeon's responsibility. In consequence of neglect on the part of the patient himself, or want of decision or judgment on the part of another practitioner, he may be called into consultation at a moment when the patient is unable to empty his bladder, which has been distended many hours. Catheters may have been tried without success; already fever may have set in, and from the feeling of distension of the bladder immediate relief must be given, otherwise rupture of the urethra will occur, followed by all the symptoms of extravasation of urine hereafter to be described.

The responsibility which a surgeon must incur under these circumstances is very great, and it will require all the presence of mind he possesses, as well as a full share of anatomical knowledge, backed by great surgical experience, fully to appreciate all the resources

of his art, and bring his patient safely out of the dangers which menace him.

The surgeon should ascertain from his patient, if possible, how long he has suffered from stricture; what has been the treatment followed; how long it is since an instrument passed the obstruction; if the bladder was reached; whether the patient has been latterly obliged to pass the urine guttatum; and what has been the cause of the accession of the present symptoms. In possession of this preliminary history, the surgeon should now ascertain the state of the bladder, by percussing the distended organ above the pubes, and at the same time observe if there be much fat in this situation, in case puncture of the bladder be subsequently determined on.

Let him examine the prostate by means of the index finger introduced into the rectum; he will be able thus to judge for himself if that gland is generally enlarged, and if not, whether there is great distension behind it, so as to enable him to puncture the bladder in this situation, if deemed advisable.

Lastly, let the surgeon examine the perinæum, and ascertain as far as he can externally the probable condition of the urethra. He may find a simple stricture in the spongy portion not more than an inch in length; he may discover a circumscribed swelling which may present the sensation of fluctuation behind it, or he may meet with urinary fistulæ, or masses of hardened cicatrices, or he may discover that extravasation of urine has taken place already, and that a distinct and resistant swelling presents itself in the perinæum, which will convince him that, if this be opened, the urine will have a free exit.

TREATMENT WITH CATHETERS.—To form a still more satisfactory opinion, however, it will be necessary to pass a catheter, to ascertain exactly the condition of the urethra. The failure of one surgeon should not deter another from attempting to pass instruments.

Liston advises the use of small silver catheters with rings, so that when introduced, the instrument may be kept twenty-four hours *in situ*.

Sir B. Brodie recommends a small cat-gut bougie, or the smallest gum catheters that have long been kept on a curved iron wire, introducing them without the wire; if unsuccessful, he advises the small silver catheter, shorter and less curved than usual.

In a recent case, which had resisted repeated attempts to force the passage of instruments, I at once reached the bladder by introducing one of the finest elastic bougies; and in the same individual who, a few days after, was unable to make water, I introduced the same instrument, allowing it to remain in the bladder a few minutes, when on withdrawing it the patient made water with a little difficulty, but to his great relief.

The surgeon must, on the one hand, recollect that it is of the greatest consequence to re-establish the natural course of the urine; puncture of the bladder above the pubes or through the rectum, may be a simple means of relieving the distended organ, but we shall always have to revert to treating the diseased canal; hence, from the first we should direct all our energies to enter the bladder by the urethra. It often happens that a clever manipulator will succeed in introducing a catheter when a less skilful one has failed, particularly if the

stricture is seated in the anterior part of the spongy portion of the canal, where no false passages exist, and when the prostate is not very much diseased. Even in the very worst cases the instrument may sometimes be introduced.

Before attempting to introduce an instrument the patient should be placed under the full influence of chloroform, and then laid across the bed, his back and head supported by pillows, the soles of his feet resting flat on the floor. The surgeon then seats himself in front, between the knees of the patient; a silver catheter, with a flat handle, about No. 4, presenting a very slight curve, is introduced, and should be carried down to the stricture and pressed against it, so that the point of the instrument should enter the constricted portion, care being taken that the handle of the instrument shall always remain* exactly opposite the umbilicus, and the point pass along the upper wall of the urethra. When the flat unsupported handle deviates to the right or left, the surgeon may suspect that the point of the instrument is in a wrong direction; but as long as the original direction is maintained there is less fear of making a false passage.† Another criterion of danger may be the pain which the instrument produces. This, however, is a more uncertain guide, as in some instances the patient suffers a good deal even when the catheter is in the right direction. . By carefully pressing first in one direction and then in the other, the surgeon will arrive at a knowledge of the exact course of the canal, and then by depressing the handle to a considerable extent, he may hope to succeed in placing the catheter in the bladder.

The degree of force which a surgeon may employ in passing an instrument into the bladder is thus distinctly stated by Mr. Bransby Cooper:—"When the patient presents severe symptoms of retention requiring immediate relief, such as great distension of the bladder, great constitutional irritation, and violent pain, an attempt should be made to pass a catheter, and if this instrument can be brought to a right angle with the position of the recumbent patient, and then, and not till then, becomes checked in its progress to the bladder, it is plain that the obstruction is situated at the membranous part of the urethra, where the operator may safely use force if he apply it judiciously, and by depressing the handle of the instrument; for the risk which would be incurred in other portions of the urethra by such a proceeding is here in a great measure precluded by this portion of the canal being firmly connected to the surrounding parts of the deep fascia of the perinæum, and by the instrument itself being here guided and pro-

* If the instrument meets with great impediments at the membranous portion, the finger may be introduced per rectum, so as to guide the progress of the instrument through that portion of the canal, and to inform the surgeon whether the catheter is moving onwards in the line of the urethra, or towards the rectum; it can, however, be no guide when the obstruction is anterior to the membranous portion of the urethra.

† I believe I have seen false passages made, and yet the instrument has retained its proper direction, and when left to itself neither turns to the right nor left, and yet water does not come, although the point of the instrument appears to have a lateral movement. In such cases was the eye of the catheter blocked up with blood or mucus? No post-mortem examination enabled us to judge.

ted in its course by the os pubis.”—(“Guy’s Hospital Reports,” vol. v. p. 75.)

At page 78 he again says, “I hold, then, that where the symptoms are urgent and the stricture is situated *posteriorly* to the deep fascia of the perinæum, force may be employed with propriety; but that when the stricture is at the bulb, though the symptoms are not more severe, an operation should be performed consisting in opening the membranous portion of the urethra.”

Mr. Cock, surgeon to Guy’s Hospital, writes thus:—“He (the surgeon) may take a small but strong catheter, one that will not bend, and firm of purpose, with unflinching hand and fearless—I had almost said remorseless—heart, he may carry it through all intervening strictures and obstacles into the bladder. It may be denominated ‘forcible catheterism.’ It is, as it were, puncturing the bladder with a blunt instrument—*tunnelling* through the perinæum under cover of the urethra. It is neither scientific in its conception, surgical in its performance, nor anatomical in its details. It can only be countenanced and justified on the principle that the end sanctifies the means. Attempts have been made to modify and soften down its essential roughness by denominating it the operation of forcible dilatation, or breaking down of a stricture; and the surgeon, perhaps, tries to delude himself into the idea that his instrument either enters the stricture and forcibly expands it, or else that it breaks it down and destroys it. To the best of my belief neither of these desirable events ever occurs. The catheter neither expands nor crushes the stricture, but it altogether eludes it, passes outside the obstacle, and then either re-enters the urethra below, or else continues its course through the prostate into the bladder. I have at different times had the opportunity of examining (post mortem) the urethras of many persons who had evidently undergone this species of catheterism, and I have never failed to discover the line of road, or in railway parlance the loop, where the instrument had left the canal, to re-enter it at some point below the stricture. Nevertheless, the operation of forcible catheterism is one which we are not unfrequently obliged to have recourse to as the only means available to relieve our patients; and when performed resolutely and firmly with a small strong instrument adapted for the purpose, it is not necessarily, or indeed usually, followed by the evil consequences which it might be supposed to entail on the sufferer.”—(“Med. Chir. Trans.” vol. xxxv. p. 156.)

If the surgeon’s attempts are successful, the further treatment of the case is very simple. The urine now has a free exit, and for the purpose of maintaining this necessary outlet, the catheter must be left in the bladder, and attached to a suspensory bandage by means of thin tape tied to the rings of the instrument, or to the instrument itself, if it be made of gum elastic. The necessity of thus fixing the catheter should be impressed on the patient, as I have twice seen the catheter coughed out when left unfastened. In twenty-four hours the silver catheter is withdrawn by some practitioners, and replaced immediately by a gum elastic instrument, the passage having become much larger in consequence of the suppuration which the persistence of the catheter in the urethra has occasioned. The re-introduction of the

instrument is, however, not always so easy a matter, and I should recommend the young surgeon to keep the catheter in the bladder at some risk to the patient's comfort, rather than withdraw it, particularly if on every second day the precaution be taken to wash out the instrument and bladder by injections, which will remove anything that obstructs the eyes of the catheter, and carry off the ropy mucus from the viscus. It may, however, be necessary to give remedies for allaying irritation of the bladder. I should try many things before withdrawing the catheter, even although it gave some little pain, or induced slight irritation, as it does occasionally. I should in addition recommend the surgeon to plug the orifice of the catheter with a little cork, and allow the patient to relieve his bladder occasionally by withdrawing it. Some practitioners object to this, in the belief that if there is not a free egress for the urine, that fluid will find its way by the side of the instrument, and increase the infiltration of urine, if that has occurred. This I think not probable, as the patient can empty the bladder frequently, and generally the catheter is so firmly held by the strictured parts that the fluid will not pass out in that way at first. The advocates of this treatment should recollect that a collapsed bladder will necessarily impinge on the point of the catheter, a catastrophe not without danger, should it occur, as sloughing of the part is imminent. Lastly, the air cannot without risk be permitted to come freely into contact with the bladder; and this is not obviated even if an empty bladder be attached to the external aperture of the instrument. Still the silver catheter should be replaced by a gum elastic one, as soon as possible. In a week the catheter will have become loose, and urine may pass between it and the sides of the urethra; it should now be withdrawn, and an instrument of a larger size introduced. It is in such cases as these that the use of Mr. Wakley's instrument would be very desirable, particularly if it were found that the urethra was tolerant of catheters. The cure might then be effected in a short time.

The attempt to pass the instrument may, however, prove a failure. Now we must never lose sight of the fact that our main object is to re-establish the flow of urine through the ordinary channels. There are many means of temporarily emptying the bladder, and relieving the most urgent symptoms; still we must always return to the object of removing the stricture. To attain this it would almost appear as if each surgeon, or hospital, had a different form of procedure, supposed to be applicable to nearly all cases. One, however—viz., puncture of the stricture from before backwards—seems almost universally given up; and consequently I shall not describe it, but pass on to the other forms of operation more commonly practised.

CUTTING DOWN UPON THE URETHRA BEHIND THE STRICTURE.—This plan, either alone, or in conjunction with other methods, has had many able advocates. Liston says, "Rather than puncture the bladder, the stricture should be cut down upon, and an opening made into the dilated part of the urethra behind the stricture. A fine silver catheter is passed down to the stricture, and retained there by an assistant; an incision in the line of the central raphé (supposing

the constricted part to be in the perinæal region) is made over the extremity of the instrument, the contracted part of the urethra is divided, and the catheter passed on into the bladder. Thus, even in the worst cases, the natural course is at once established. In every instance of difficulty and complication, the catheter, however passed, should be retained for two or more days. The above is the only advisable mode of puncturing by the perinæum."—("Elements of Surgery," p. 135.)

Mr. Bransby Cooper thus describes the operation :—

"The patient should be placed in the same position as for the operation of lithotomy, and an incision of about two inches in length be made in the course of the raphé of the perinæum, dividing the superficial fascia. In operating for stricture, there being no staff to serve as a guide to the membranous portion of the urethra, advantage is taken of the raphé as a guide in cutting. After the incision has been made, the second step of the operator is to pass the forefinger of the left hand into the upper part of the wound, directing it towards the arch of the pubis, when the urethra will be readily felt, especially if the patient be desired to strain, as in the attempt to make water. The incision is then to be made into this distended and fluctuating canal, and through the opening a female catheter is to be passed into the bladder and the urine drawn off. A male catheter should be passed through the penis down to the stricture; its point should then be felt for, with the finger in the incision which has been made in the perinæum, and will be perceptible through the thickness of the stricture, the distance between it and the finger being of course the depth of the adventitious growth which constitutes the stricture. This must next be divided by the knife, and the male catheter may then be passed on into the bladder through the opening which had been made for the introduction of the female catheter; the instrument is afterwards to be kept in the bladder."—("Guy's Hospital Reports," p. 78.)

On the other hand, many able surgeons have strongly reprobated the practice.

Sir B. Brodie says, "As to the puncture of the urethra, between the stricture and the prostate, it is true that a surgeon who is quite conversant with the anatomy of the perinæum, if he proceeds carefully, will be able to accomplish it in a thin person; but a surgeon who has been living where he has had no opportunity of keeping up his knowledge of this part of anatomy, will not find it a very easy task to cut down on the membranous portion of the urethra, when neither sound nor catheter can be introduced into it to point out its situation; and in a fat person, with a deep perinæum, I suspect that this operation will sometimes perplex even the best anatomist."—("Diseases of the Urinary Organs," p. 40.)

Mr. Syme likewise strongly objects to this mode of treatment; he says, "The last, and certainly the most objectionable of all the methods which have been mentioned above as in use for the treatment of stricture, is cutting into the perinæum in search of the obstructed canal, without any further guide than the point of a catheter, introduced, not through, but merely down to the contracted part."—("Stricture of the Urethra," p. 56.)

It is Abernethy, I think, who relates that John Hunter was called one night to cut down and find the urethra; but that anatomist, in his shrewd way, advised the patient to be put to bed, being of opinion that daylight was best for performing this delicate operation.

Still, cutting down on the urethra is in some exceptional cases the best plan that can be devised, and is attended with success. For instance, when a fistulous opening or an abscess exists, or the distended urethra can be felt behind the stricture, or when extravasation has occurred, an opening may be made in the perinæum, in the hope that the urethra may be found. But it is only those who have attempted, or seen this operation attempted, that can speak of the numerous difficulties which often attend it. Old disease may have altogether altered the natural structure of the perinæum; in cutting into it there is no guide, no catheter will pass, and there can be consequently no staff to cut down upon. I have heard of patients being taken back from an operating theatre without an opening having been made into the bladder through the perinæum. Even in successful operations the hæmorrhage is sometimes very profuse, in consequence of the vessels not being able to retract in the hardened tissues, and the patient subsequently sinks under the combined effects of the disease and the operation. I should, therefore, deprecate the undertaking of this operation, except under the peculiar circumstances mentioned above; although some eminent men have recommended it, "as killing two birds with one stone." If attempted, the surgeon should make his incision as much in the line of the raphé as possible.

PUNCTURE OF THE BLADDER THROUGH THE RECTUM.—Supposing the case very urgent, two means of relieving the bladder still remain. If examination per rectum has not detected an enlarged prostate, and if we have reason to believe that the retention of urine is of recent date, that the obstruction is only of a temporary nature, and that rest and a warm bed will probably again open the canal of the urethra, I should have no hesitation in preferring this operation. The manner of performing it is as follows:—

A long, thick, curved trochar may be passed along the index finger of the left hand, which should be previously introduced into the rectum beyond the prostate, and then the bladder should be punctured in the middle line. The canula should be left in for the next twelve hours, and it may then be withdrawn, or replaced by a piece of elastic gum catheter. If withdrawn, however, the opening may rapidly close; if left in the wound, it is difficult to keep the instrument in its right position without great inconvenience to the patient when he passes his motions, as well as irritation of the bladder. In addition to these objections, the nates are kept constantly wet, and when the patients are previously reduced by disease (as happens in such cases as we are describing), this constant dribbling of the urine is not without danger, and on these accounts the operation has been laid aside by many practitioners who prefer puncturing the bladder above the pubes.

Sir B. Brodie says, "On the whole, from what I have seen, I am inclined to recommend the operation of puncturing the bladder from

the rectum ; that is, in those cases where the bladder is much distended, and prostate healthy. The operation is simple, free from pain and danger. After the trochar is withdrawn, the canula may be allowed to remain for the next day or two. By the time that the canula is removed, the sides of the wound will have become agglutinated, and it may perhaps continue as a fistulous communication between the bladder and rectum until the stricture is cured.”—(“Diseases of the Urinary Organs,” p. 40.)

In the Borough hospitals this is the operation that is most frequently, I believe, performed for impermeable stricture. Mr. Cock, in a valuable communication read before the Medico-Chirurgical Society in 1852, says, “All these operations have their drawbacks ; but on the whole I am disposed to believe that the bladder may be reached with the smallest amount of pain, with the least risk of present or future danger, and with the greatest prospect of ulterior good by puncture through the rectum.”

Rynd remarks, p. 73, “Through some cause or other, it (the operation of paracentesis vesicæ by the rectum) unquestionably is not a favourite with the Irish practitioner ; there are several hospital surgeons here of great experience who have never had an opportunity of witnessing it even once.”

PUNCTURING THE BLADDER ABOVE THE PUBES.—The operation of puncturing the bladder above the pubes of course cannot be performed in cases where that organ is contracted, and the difficulty will be further increased if the person is very fat ; but in other instances it can be done with so much ease that it has even been resorted to in many cases when other plans of treatment would have sufficed. Still, it should be remembered that although by drawing off the urine in this way, the stricture will have some little repose, and the surrounding parts get into a quiet state, yet in the severe cases we are describing the impediment to the course of the urine depends upon no temporary cause ; the natural canal is either turned from its natural course, or its walls are converted into a semi-cartilaginous mass. It is true that this respite from the straining to which the patient has been perhaps subject for some time, will abate, and if either abscess or urinary infiltration has been imminent, it may be prevented ; but as far as the stricture itself is concerned, the same difficulties will present themselves as before puncture of the bladder ; so that the after-treatment will be nearly as difficult as before, except as to the fear of rupture of the urethra. The same difference of opinion exists as to the dangers and difficulties of this operation which we have above noticed in respect to the other modes of procedure. Thus, Liston observes, “Puncture above the pubes is easily enough performed when the bladder is capacious, but it is at best a dangerous operation. The wound is made through loose cellular tissue ; urinary extravasation into the tissue is apt to occur, and proves fatal. If the bowels are inflamed, or evince a tendency towards inflammatory action, the danger is increased, for a formidable wound is made in the immediate vicinity of the bowels.”—(“Elements of Surgery,” p. 143.)

Sir B. Brodie states, “If the patient be thin and the bladder much

distended and very prominent in the abdomen, you may very safely puncture it above the pubis ; but if the patient be corpulent, this operation will be difficult, and if the bladder be contracted it will be impracticable.”—(“ Diseases of the Urinary Organs,” p. 39.)

Rynd, who mentions that puncture of the bladder, above the pubes, is the plan usually followed in Ireland, says, “The great objection to this operation arises out of the difficulty of preventing the escape of the urine, subsequently, from the wounded bladder, and of procuring an easy channel for its removal from the parts in which it rests ; the circumstance of the catheter not completely filling the aperture made by the trochar causes the one, while the position in which the patient is obliged to be, effects the other. Yet patients sometimes, nay, frequently, escape, and the operation, practically, does not present an aspect so very formidable, as reasoning from theory alone would seem to indicate.”

The best method of performing it is as follows :—

The distended bladder must be felt for above the pubes, and an incision should be made through the parietes of the abdomen in the median line, a little above the pubes, extending two or three inches in length, down to the bladder. When this organ is exposed, a trochar should be thrust into it, downwards and backwards, and the urine will pass out, to the great relief of the patient.* In cases of great distension of the bladder, it may become a question whether half the urine only should not be allowed to escape at first—particularly in instances where there is a tendency to syncope, or in persons much reduced—and the remainder allowed to pass out in a short time. The canula should then be plugged, and allowed to remain in for twelve hours ; condensation of the surrounding cellular tissue will then have occurred, and infiltration is less to be dreaded ; a piece of gum-elastic catheter, mounted on a button, may replace the instrument, to which a little cock may be fixed, and the patient can thus make water when he pleases. Mr. Lloyd lately showed me a person whom he had operated upon several years ago, and who is so content with the result, that he will not allow his stricture to be touched, and for a long period he has been passing his water in this way.

Mr. Stanley possesses an apparatus which a gentleman, a patient of Mr. Abernethy's, wore for many years ; the point of the catheter projecting from the abdomen, was protected by a wire grating, so that the patient could walk about ; he likewise would not allow the natural passage to be interfered with ; by opening a little stop-cock this patient could relieve his bladder at will, and was in the habit of washing out the organ when necessary, so that he passed the remainder of his days in comparative comfort. Both the surgeons last mentioned consider that the operation above the pubes is the best plan of relieving the bladder.

* Fergusson observes, “Care should be taken that the peritonæum is above that part where the puncture is about to be made : the upper end of the bladder will be probably greatly distended and prominent in the hypogastric region, and thus beyond risk. There must be danger from the proximity of the serous surface in case of escape of urine into the cavity, or of inflammation ; but there may be equal hazard, perhaps, in making the puncture too close to the pubes, for as the bladder contracts, the orifice may sink so much into the pelvis that infiltration may ensue.”—(“ Practical Surgery,” p. 614.)

Before quitting this subject, I would again repeat what I stated at the commencement of this section, that the necessity of puncturing the bladder is daily becoming less and less necessary ; in proof of which, Sir B. Brodie says, "After all, however necessary it may be to the safety of the patient in some instances, it is an operation that is very rarely required. Surgeons who see a great number of cases of retention of urine, may be called on to perform it in a few instances. Those who perform it frequently, must often perform it unnecessarily ; at least this is what I should say, judging from my own experience." — ("Diseases of the Urinary Organs," p. 42.)

The after-treatment of these severe cases must be guided by general principles, but a free administration of opium, wine, and ammonia will be usually required, as depression of the vital powers is almost certain to follow. A number of unlooked-for difficulties also frequently occur. There is often old renal disease, and the patient's health has been usually reduced by want of sleep, consequent on his almost constant suffering. Still, I hope the preceding observations will enable the practitioner to select the best and least dangerous plan adapted to individual cases, which must differ in so many particulars.

SECTION VII.

INFILTRATION OR EXTRAVASATION OF URINE.

It is a little doubtful whether the affection here to be described should not be classed under the head of fistulæ.

The circumstances are these : during the course of a gonorrhœa, perhaps in consequence of painful chordee, a little swelling, about the size of a pea, rises in the course of the spongy portion of the urethra. Some patients will tell you that they felt something give way during a painful erection. The lump often comes, however, without apparent cause.

These swellings may gradually disappear as the case gets well, and no further ill consequences follow ; or in a short time irritation may be set up, attended with considerable fever. The cause of the phenomenon is, as I believe, that in some sudden effort at micturition a mere drop of urine escapes into the cellular tissue. After a time the symptoms produced by the accident abate, but afterwards a little more urine escapes, and the patient is threatened with an abscess. For a time, again, all is quiet, and there is nothing to notice except a little oblong swelling, more or less painful on pressure, extending from the urethra into the perinæum. In such a case I have never yet had an opportunity of examining the dead body ; so that I am unable to say positively upon what this swelling depends, but I believe we should find a fistulous opening in the urethra, which has either commenced in the way above described, or that a little abscess in its walls has broken into the urethra, and has allowed of a limited extravasation of urine, which sets up a circumscribed inflammation, the fistulous opening becoming lined with a regular organized false

membrane, preventing the further extension of disease. I believe the opening may be not larger than that of a pin-hole, yet sufficient to allow of the escape of urine. If the urine is examined, it will be found loaded with mucus or pus, presenting those shreds spoken of at p. 72.

As to the treatment, if left alone, the cases seldom get better; occasional exacerbations of the symptoms occur, laying the patient up for a day or two. The symptoms increase, and the internal fistula gets larger and longer, until one day an abscess opens in the perinæum, and the case becomes one of perinæal fistula in its usual form. This form of disease is fully described at p. 133.

I lately attended, in consultation with Sir Benjamin Brodie, the case of a medical man who suffered from this complaint. Bougies were passed every other day, the urethra dilated at the point where the fistulous opening existed, and as the urethra regained its original calibre, the fistula closed, and the patient is now quite well. This case had been previously seen by other eminent surgeons in consultation, who objected to passing instruments, and advised that nothing should be done, until an external opening had been formed, and proposed then to cut into the swelling. I have not found these incisions turn out satisfactorily.

The mere passage of a bougie, however, will not in all cases be sufficient. I lately had under my care a young man who being obliged to move about a good deal, could not take the care he ought, and, in his case, a fistulous opening followed, in spite of the occasional passage of the instrument. In this case the urethra regained its usual diameter, but the fistula did not disappear—much to my regret. I should, however, always advise the passage of a bougie in the early stage; for if the cases are left to themselves, they will necessarily lead to further mischief.

It would, however, be a good thing did the extravasation of urine give rise to no worse consequences than these; unhappily the complaint usually assumes a much more severe form. One of the immediate consequences of impermeable stricture is rupture of the urethra, and effusion of urine into the cellular tissue around the canal, which I shall now proceed to describe.

The CAUSES of infiltration of urine arise from rupture of the wall of the urethral canal in some part of its course, proceeding either from a softened state of the mucous membrane, a consequence of inflammation (usually of a chronic kind); from pointing of an abscess, as mentioned in the last page; from rupture due to violence; or from attempts at breaking a chordæ.* Most frequently, however, infiltration is due to a bursting of the urethra behind a stricture, depending equally upon a *ramollissement* of the canal at that point, the action of the abdominal muscles, and an hypertrophied bladder.

* The same effect is stated by Bell to follow the injudicious employment of the armed bougie, and I have myself witnessed similar consequences result from the employment of instruments which puncture the stricture. M. Civiale, in his "*Traité Pratique sur les Mal. des Org. Gen. Urinaires*," states that infiltration follows the lodgment of stones in the urethra, and cites several cases to prove this position.

The following observations will principally apply to this latter form of infiltration, one which demands the greatest attention on the part of the surgeon, as the life of the patient is at stake.

Before describing the varieties of infiltration which are met with in practice, it may be well, perhaps, if I recall to the recollection of some of my readers a few particulars on the surgical anatomy of the perinæum and its fasciæ, directly bearing upon this question, and without which it is impossible properly to treat these cases. No one has more ably described the fasciæ of the perinæum than the late Mr. Morton. He says, "The superficial fascia of the perinæum is situated in the anterior or urethral division of the perinæal region, and is a thin membranous layer which conceals the muscles of the penis. On each side, the fascia is attached to the borders of the branches of the ischia and ossa pubis, anteriorly it passes forwards into the scrotum, where it appears to become continuous with the dartos; posteriorly it is inserted into the inferior surface of the triangular ligament of the urethra, behind the posterior border of the transverse muscles of the perinæum, which it covers. If a small slit be made into this membrane posteriorly, and the extremity of a blow-pipe introduced under it, the air which is introduced will be observed, after distending the perinæal portion of the fascia, to pass forwards into the scrotum, and diffuse itself into the loose cellular tissue which separates the dartos from the sheath, which the spermatic cords and testicles receive from the margins of the external abdominal rings. If the inflation is continued, the air will, after distending the scrotum, make its way upon the front of the abdomen in the loose cellular tissue which connects the aponeuroses of the external oblique muscle with the superficial fascia of the inguinal and hypogastric regions. It is by following the same course that the urine, which is sometimes extravasated underneath this fascia by a rupture of the anterior part of the urethra, is seen to make its way along the perinæum into the scrotum, and even upon the anterior and lateral parts of the abdominal parietes."—"Morton on the Perinæum," p. 12.)

Should rupture of the spongy portion of the urethra take place behind the superficial fascia, the urine will be enclosed between it in front and the triangular ligament behind, the attachments of which are shown in the annexed woodcut, taken from Morton, p. 28. Rupture of the urethra, however, may take place in the membranous portion of the urethra, behind the triangular ligament; in this case the urine will become infiltrated in the space between *d* and *e*, as seen in the same cut.

If rupture of the urethra takes place at the membranous portion, the urine will be prevented from passing forward by the triangular ligament; below, above, and behind, in consequence of the attachments of the pelvic fascia. Thus shut in, the water will form a tense hard swelling in the perinæum where it will point, and its exit will be principally opposed by the triangular ligament, a structure which resists the passage of urine, until sloughing is produced.

SYMPTOMS.—The patient, who has been long labouring under difficulty in making water, may, during one of the efforts to pass his urine, suddenly feel something give way, and is surprised that no

water passes by the urethra ; at first, relief is obtained if the bladder is very much distended ; soon, however, severe pain is felt in the perinæum, the patient becomes feverish and anxious, and his alarm is increased by his observing swelling and redness of the perinæum, scro-



LATERAL VIEW OF THE FASCIE OF THE PERINÆUM.

a. Bulb of the urethra; *b.* Membranous portion of the urethra; *c.* Prostatic portion; *d.* Triangular ligament; *e.* Pelvic fasciæ.

tum or penis ; to the finger these structures first feel hard and tense, a dusky blush soon follows, and the skin, which becomes quaggy and crepitant, appears on the point of sloughing ; the pulse, at first full and rapid, soon becomes feeble, intermitting, and irritable, the tongue is dry and cracked, the countenance altered, and typhoid symptoms set in with remarkable violence.

Provided no treatment is resorted to, the symptoms become more aggravated ; the skin and cellular tissue assume a dark colour, and gangrene follows ; large pieces of mortified structures become detached, and the bones, aponeuroses, and muscles are exposed. Desault speaks of cases in which he has seen the whole of the skin of the scrotum, that of the perinæum, and the upper part of the thighs, come away, leaving the testicles floating in the midst of this immense ulcer. The patient sinks under this fearful complaint, either breathing his last in the midst of convulsions, or, what is more common, he falls into a state of stupor, rapidly followed by death.

DIAGNOSIS.—It may appear futile for a surgeon to devote a para-

graph to the diagnosis of infiltration of urine, but in practice cases occur which prove that this is not always so easy as may be imagined. When we have the symptoms above spoken of present, it is not a difficult thing to say that we have to treat effusion of urine. But I lately saw a person on whose perinæum a horse had fallen, and rupture of the bladder or urethra was dreaded. On the morning after the accident a bluish tinge appeared on the lower part of the abdomen, and infiltration of urine was supposed to exist, but the lesion proved to be only ecchymosis.

It may not be uninteresting to inquire, if in practice we can say, before cutting into the infiltrated tissues, whether the spongy portion or the membranous part of the urethra has given way, and this is of the greatest importance, as our treatment might be different according as one or the other portion had been ruptured.

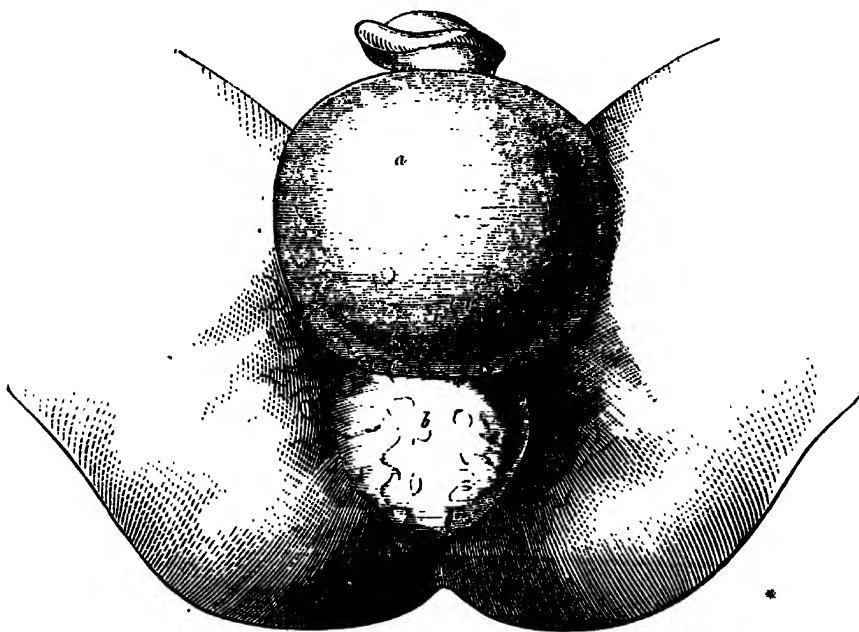
In the first edition of this work, I stated, that although anatomical considerations might induce the surgeon to believe that the infiltration would differ in the direction the urine takes, as rupture of the urethra occurs in one or other part, practice does not always bear out the theory. The extent and rapidity of infiltration seem often rather to depend upon the size of the rupture, upon the resistance of the aponeuroses, and the contractions of the bladder, than upon any other circumstance, since in almost all these cases the natural texture of the parts is much modified by long-standing disease. Subsequent experience, however, induces me to believe that an observant surgeon may often be able to distinguish at what part the urethra has given way; and the means by which I can, or think I can, arrive at a correct diagnosis are the following:—

Infiltration of urine from rupture of the spongy portion of the urethra, should be denoted by a thickening rather than swelling in the anterior portion of the perinæum (from the urine not being able to pass backwards, in consequence of the triangular ligament,) followed by enlargement of the penis and scrotum; there may also be infiltration upon the abdomen above the pubes. In many instances these symptoms may be noticed.

In consequence of the little tension of the superficial fascia, the enlargement in the perinæum will not be great, and the surgeon will perceive rather a pitting and quaggy state of the perinæum, than a distinct swelling. On cutting into this form of infiltration, a distinct abscess will not be found if the case is seen early, but the finger passed up will discover the ruptured urethra. In consequence, however, of previous disease, which has altered the natural structures of the perinæum, rupture of the anterior portion of the urethra will give rise to various modifications in the course of the infiltrated urine; this will occur particularly when abscess has formed around the canal, and the walls of the abscess containing pus and urine have given way subsequently. A tense swelling will then be found in the anterior portion of the perinæum. The scrotum may become œdematous, but no urinary infiltration will take place, in consequence, probably, of the existence of old disease. In a case I lately witnessed, there was a tumour in the anterior part of the perinæum attached to the spongy portion of the urethra, but no swelling of the scrotum or penis, the

urine having passed up to the abdominal parietes, which, on being incised, allowed the escape of the fluid, and sloughing subsequently followed; the finger and probe could be passed BEHIND the pubis, and communicated with the swelling in the perinæum, thus forming a mixed case, in which it was difficult to say where the rupture had taken place, and contradicting all the anatomical relations given above. It is, however, highly important for the surgeon to be acquainted with the natural and exceptional relations of these fasciæ. Observation has taught me that the diagnosis of rupture of the spongy portion of the urethra may be assisted, by considering the time that has elapsed between the period when the bladder was last relieved and the present symptoms. I am induced to think that when the spongy portion gives way, the symptoms of infiltration, that is to say, the swelling of the scrotum and abdomen, occur at once, as the urine has no barrier to impede its egress; not so when the deep-seated fasciæ check its progress forward. The constitutional symptoms are likewise not so severe in the former case as when the effusion takes place behind the deep fasciæ.

I should be inclined to diagnose rupture of the membranous portion of the urethra, when I found, together with severe constitutional symptoms, a firm tense swelling, pointing in the perinæum, as shown in the following woodcut, taken from a patient who was brought into



SWELLING CAUSED BY INFILTRATION OF URINE BEHIND THE TRIANGULAR LIGAMENT.

a Represents the scrotum distended with serum, and which afterwards sloughed away.

b Is the defined swelling in the perinæum, from which, on being incised, issued urine mixed with fetid matter.

St. Bartholomew's Hospital under the care of Mr. Stanley, during the winter of 1850. And I should be further borne out in this supposition, if the swelling had appeared twenty-four hours or more after the

first symptoms of rupture of the canal. In such a case as this, however, the diagnosis is at once cleared up by an incision into the tumour; a free exit being given to the pus and urine, the finger may, when passed deeply down, give evidence of the situation of the rupture.

THE TREATMENT.—The young surgeon, when called to these cases, had better obtain the assistance of a colleague, for the responsibility attached to them is very great. I should advise that the patient be brought before a good light, so that every possible advantage be obtained from a thorough investigation of the case, which will be very necessary in the subsequent proceedings. The patient should be likewise placed on an operating table or laid on some elevated flat surface, so that in any operation the surgeon should not have occasion to stoop. In cases of infiltration, the practitioner cannot, as in impermeable stricture, have recourse to opium, warm baths, or purgatives: he has, in the former case, only two objects in view,—to relieve the distended bladder, and by free incision to allow the cellular tissue to disencumber itself of the effused urine. Probably attempts have been made to pass a catheter. I should always recommend the practitioner to try to pass an instrument when the patient is placed before a good light or on the operating table. Should the catheter pass, the urine will flow, to the great relief of the patient, and the instrument may be left in the bladder, as in cases of impermeable stricture, and free incisions must now be made into the infiltrated tissues. The number, depth, and direction of the incisions must depend upon the circumstances of each particular case, and care must be taken to leave a free passage for the urine, otherwise a second train of symptoms may arise. M. Civiale, in his valuable treatise above alluded to, states that young practitioners too often fall into the error of not cutting the infiltrated parts sufficiently deeply; for, says he, the swelling is considerable, and on its abatement, the surgeon will be surprised to find how superficial have been his supposed extensive incisions.

Another grave error which I have seen committed consists in the disinclination to cut into the perinæum, and give a free exit to the contents of a swelling in that position, when the infiltration of urine is slight, and a catheter can be passed and the urine drawn off. The reader will best see the consequences by a brief detail of a case.

A man for some years had been suffering under bad stricture; within the last three days the urine had passed only guttatim; he was brought into hospital with a distended bladder, a small circumscribed swelling in the perinæum, with inflammatory œdema above the pubis on the left side. A catheter could not be introduced, and only a table-spoonful of urine passed in the warm bath. The man was put upon the operating-table with the intention of cutting into the perinæum, but at the suggestion of a colleague, a catheter was passed, the patient being under the influence of chloroform, and three pints of urine drawn off; two incisions were made in the inflamed cellular tissue above the pubis, and the tumour in the perinæum was left alone, a catheter being left in the bladder. The patient was relieved, but in twenty-four hours, as the sloughs were enlarging above the pubis, it was thought advisable to cut down upon the tumour in the

perinæum, which had increased in size, and from which offensive pus and urine now gushed out ; a free communication was found to exist between the incisions above the pubis and the perinæum, proving that in the first instance the perinæum ought to have been opened, and a free exit given to the infiltration. Let the young surgeon profit by this case, and freely cut down at once in cases where he has good reason to think that urine is effused.

The after-treatment is very simple :—opiates, wine, ammonia, warm fomentations or poultices, sprinkling the sloughs with equal parts of powdered cinchona, bark, and charcoal ; daily examination to guard against the urine burrowing in any direction, will be necessary ; during the first few days the urine will be continually dribbling away, and care must be taken to change frequently the sheet on which the patient lies ; this adds considerably to the comfort of the patient, and prevents bed-sores, erysipelas, and their sequelæ ; subsequently the patient will generally have control over his water. In proportion as the structures get into a healthy state, and as complete cicatrization is taking place, part of the urine will often pass by the natural passage, and the immense chasm in the perinæum gradually closes. Up to this moment the surgeon should not interfere with the urethra :* now, however, he will do well to pass a catheter down the urethra so as to dilate the passage, and, on a subsequent occasion, he may be able to get an instrument into the bladder, where it should be kept, and the case treated as one of fistula *in perinæo* ; and if the patient have no disease of the kidneys or other constitutional affection, recovery may be anticipated.

In the class of cases of infiltration just cited, the surgeon has been able to pass an instrument ; it not unfrequently happens, however, that the best operator will be unable to get a catheter into the patient's bladder. The instrument is obstructed in the spongy portion of the urethra ; in such a case it is best to withdraw the catheter, and pass a grooved sound down to the obstruction, and, placing the patient in the position for lithotomy, to cut freely down upon the sound ; if the finger be now introduced into the incision, the urethra, will probably be found torn, and the tissues unhealthy, but no distinct abscess or urinary dépôt detected—the cause of the infiltration will be thus at once laid bare. In this case it does not follow that the urine should flow through the wound ; the bladder being very much distended, rises in the abdomen, and has ceased perhaps to contract, or the prostate probably is enlarged, and thus a valve is placed on the opening, the urine only dribbling out of the wound. The incision in the perinæum does not relieve the bladder, it only gives an exit to

* M. Rynd recommends the patient to be placed on a table within a few days after cutting into the perinæum, and a gum elastic catheter to be passed down the urethra, until an inch or two of its extremity comes through the rupture ; then, desiring the patient to make water, the surgeon should watch the spot whence it issues, pass a probe, and subsequently turn up the beak of the instrument along the probe into the bladder.

At St. Bartholomew's Hospital a catheter is not attempted to be passed from the opening *in perinæo* into the bladder, until the stream of urine is diminishing. Mr. Bransby Cooper, in the Guy's Hospital Reports, vol. v. p. 253, *et. seq.*, recommends this always to be done, and cites cases in which it was successful.

some portion of the infiltrated tissues, and stops the further effusion of urine. Some persons have recommended the patient to be then put to bed; and opium has been prescribed, in the hope that the bladder would after a time act. Taking into consideration the cause of the retention, that other strictures probably exist, that the prostate may likewise be enlarged, and the fear of rupture of the bladder, I should scarcely ever think it advisable to wait, but have recourse at once to some plan for relieving the bladder. If the finger passed into the wound detects no burrowing of the urine backwards, the surgeon may believe that the spongy portion of the urethra has alone given way, and as only a small incision has yet been made, I should not further interfere with the wound, but puncture the bladder either through the abdomen or by the rectum. I would not extend the incision to the bladder through the perinæum. Persons who have not seen this operation attempted, may think it a very easy matter to cut their way into the bladder, but when I state that the bladder is often drawn up out of its usual situation, that the prostate is frequently found enlarged, that all the surrounding tissues become indurated to so great an extent, that most severe hæmorrhage ensues in consequence of the vessels not contracting, and that every ounce of blood is of value to persons worn down by old urinary disease, I think I have said enough to induce the surgeon to pause ere he cuts his way from the perinæum to the bladder.

More frequently, however, when the surgeon has cut down upon the staff, or when he has opened the perinæum, a gush of very offensive matter, followed by urine, will take place; if the urine continues to pass off, the patient should be left to recover himself; and at first the water will dribble continually away. Stimulants, opium, and changing the sheet on which the patient lies, constitute all that is requisite, and the after-treatment resembles that previously spoken of. In a few days the patient will be able to retain his water, but the greater portion will pass through the opening in the perinæum; by degrees more will pass through the canal, and now a catheter may be introduced, and the case treated as one of fistula *in perinæo*.

SECTION VIII.

FISTULOUS OPENINGS.

In private practice we are most frequently called upon to treat fistulæ of the urethra just below the glans penis, in consequence of abscess in the urethra, which has been badly managed, or even caused, by inattention on the part of the patient. As a consequence, the urine dribbles through, and saturates the mucous membrane between the glans and prepuce, producing considerable irritation. Fistulæ not unfrequently occur in this situation from sloughing phagedæna, which has not been controlled until it has eaten its way into the urethra, thus leaving a fistulous opening, which gives the patient considerable annoyance.

In these cases the fistulous opening may be very small, not large

enough to admit a pin's head, and the course of the fistula may not be direct.

I have tried a variety of means of closing these little fistulæ; the best, however, consists in placing the smallest possible quantity of Vienna paste in the external opening: a little slough forms, blocking up the fistula, and cicatrization follows in the course of a few days; or it may be necessary to re-apply the caustic, on each occasion employing less and less of the paste. I have lately obtained some most successful results from this treatment.

In hospital and dispensary practice, the cases that present themselves are far more serious, and deserve the careful attention of the practitioner. "Fistulous openings," says M. Ricord, "may occur in any portion of the perinæum or urethra. They may be complete or incomplete; that is to say, they may terminate in an abscess, or on the surface of the skin. Internally, they have usually only one opening; externally, they may present several. Their direction may be variable: when they open into the bladder, the urine will escape as fast as it is secreted; we shall therefore perceive a constant dribbling from the fistula. When, on the contrary, the internal opening is beyond the neck of the bladder, the urine will escape only when the patient attempts to make water. There are, however, certain circumstances which may lead the surgeon astray—viz., when the internal opening is close to the neck of the bladder, and that organ contains but little urine, the fluid accumulated in the lower part will only be passed during the involuntary contractions of that viscus. Various pouches in the course of the fistula, as well as communications between the vagina or rectum, may likewise impede the exit of the urine. When the urinary fistulæ open into the rectum, urine will be passed only when the patient goes to stool; however, the presence of the urine will so far irritate the rectum as to give rise to tenesmus, which is very severe and constant. The more numerous the fistulæ, the greater will be the alteration of the tissues submitted to the action of the urine; the skin becomes thin and detached; ulcerations form, or else induration or horny degeneration ensues; gangrene also will destroy the cellular tissue in all cases where adhesive inflammation does not form a check to the passage of the urine. The aponeurotic layers themselves may give way; the bones in the neighbourhood may become exposed, carious, or necrosed; and lastly, the surrounding tissues may undergo a degeneration, and be converted into a cancerous or fungoid mass. As long as any obstacle to the free passage of urine by the urethra exists, the fistulous openings will evince but slight tendency to close; from the moment, however, that the canal becomes free, the cure of the fistulous openings will be speedy, and proportionate to their short duration. This, therefore, becomes a point of importance in regard to the prognosis, as recent fistulous openings are not provided with those false mucous membranes which are found organized in cases of old standing.

The temporary employment of bougies is frequently alone sufficient to cure fistulous openings. In proportion as the calibre of the urethra is re-established, the urine passes in less quantity by the fistulous opening, and a cure speedily takes place.

The cure may be further expedited by the employment of injections, as the following case shows:—In Oct. 1851, F. G. called on me with a purulent discharge from the urethra, and a fistulous opening in the perinæum, out of which urine passed on micturition; this had lasted two months. The passage of a bougie caused great pain and bleeding, on account of the flabby state of the mucous membrane. I at once ordered astringent injections, and in a month, all traces of disease had passed away, and the fistulous trajet was no longer to be felt. The patient, however, returned from time to time, to have a No. 12 bougie passed.

In these cases, I have found it well to employ as large a catheter or bougie as possible.

But this treatment is not one which succeeds so well, or so often, as some others. A great number of fistulous openings do not yield, and it becomes, therefore, necessary to keep a catheter permanently in the bladder. In addition to these precautions, a surgeon should take care to give the urethra its proper calibre, and provide against the urine passing through the fistulous opening. This, however, is not always easy, as urine will find its way between the walls of the canal and the bougie, and thus reach the fistulous opening, or do so when the instruments are removed, in order that the patient may make water. The greater number of surgeons show a preference to catheters which are left open, and which, without injuring the canal, fill it so completely, that the urine, finding easy and constant egress, does not escape through the fistulous opening.

When, however, a certain degree of dilatation has been obtained, or if this has been too great, we should, as Dupuytren justly observes, prevent cicatrization of the internal orifice by keeping its borders separated. The cure is only obtained by gradually returning to the employment of similar instruments, or altogether laying aside their use.

In some cases it has been recommended to attach a piece of sponge to the point of the catheter, as it was supposed that such means would more effectually tend to empty the bladder; more recently a piece of thread passed through the eye of the instrument has been supposed capable of the same effect, acting by capillary attraction. Other plans have been recommended, but they do not present sufficient practical advantages to need more than notice here. When the surgeon leaves an open catheter permanently in the bladder, he should, to a certain extent, oppose the free passage of air by means of an empty bladder attached to the distal extremity of the instrument.

Catheters, however, sometimes irritate the portions of the canal which they touch, and occasion inflammation and suppuration; in such cases the persistence in the use of instruments, far from remedying the disease, only tends to aggravate it, or keeps it up by the passage of the pus through the fistulous openings.

Under such circumstances the treatment must be laid aside altogether until the unfavourable symptoms have passed away, or it should be only employed at intervals, so as to keep up the improvement which has been made.

The fistulous openings must, however, be attended to; when they

are lined with a false membrane, it will be usually necessary to employ the knife, and incise them like fistulæ in other parts of the body, that their parietes may cicatrize.* But this treatment should not be employed until catheterism has failed.

In employing cauterization in these cases, care should be taken to destroy the internal opening and the deeper portions, as well as the external orifice of the fistula. I have succeeded, by cauterizing the urethra at the point of the stricture, or behind it, in reaching the internal opening, and I have injected the fistula with a solution of nitrate of silver, containing forty grains of the salt to an ounce of water. In cases where the fistulous passage is sufficiently large, I have introduced a conductor containing solid nitrate of silver; in other instances I have employed a stilette surrounded with lint dipped in nitric acid. I have sometimes obtained good results from the employment of the actual cautery; this, however, is only applicable when the passages are short and direct.

A great number of fistulous openings, which are placed in front of the scrotum, or on various points of the spongy portion of the urethra, resist all the means we have yet spoken of. Some of these fistulæ consist in simple apertures, which it is almost impossible to feel between the skin and the canal. On the contrary, in other cases there is a complete loss of substance, forming a species of *hypospadias*; to these the term of fistula no longer applies, as one opening only exists, and there is no fistulous passage. The difficulties which these cases present arise from the slight thickness of the cellular tissue, which is very loose in this situation, and from the interruption to the process of cicatrization presented by the variation of the size of the penis in its distended and relaxed state.

"In three patients at the Venereal Hospital I tried (says M. Ricord) that form of suture recommended by my learned friend M. Dieffenbach, which consists in passing a thread round the fistula at the spongy portion of the urethra, and then drawing its ends together between the skin and the canal. In these three cases the operation has failed, although performed with the greatest precautions. Two of these patients have been operated upon three times, and the third has had the ligature applied twice. At each new trial I employed some fresh modification, without, however, gaining my end. In one instance the passage was sprinkled with the tincture of cantharides; in another, it was touched with nitric acid and caustic. Once I kept an open catheter permanently in the bladder; on another occasion I allowed the catheter only to be opened when the patient felt a desire to make water; and in a third attempt I left the canal free, but with no better success."†

It is well known that little success has attended the attempts of surgeons to remedy the various degrees of *hypospadias*: the results have been similar in cases of the accidental loss of parts. In the case

* Rynd recommends free and extensive incision of the orifices of fistulous passages, in the belief that their continuance depends upon the retention of matter, and not simply on the passage of pus through them.

† Since the above was written, M. Ricord has succeeded in curing the last-mentioned patient by this method.

of a patient who had lost two-thirds of the inferior portion of the spongy part of the urethra between the scrotum and prostate, and upon whom M. Breschet had previously unsuccessfully employed two sutures, I failed likewise in obtaining any benefit, although I tried one of the plans recommended by M. Dieffenbach, which consists in dissecting the skin on either side of the abnormal opening, to a certain extent, and bringing the flaps nearly together by means of strips of plaster, having previously trimmed the edges. I had recourse also in the same patient to *urethro-plastie*, performed at the expense of a flap of skin taken from the scrotum; but in this case the operation partially failed, union not taking place to the extent of a third of the opening, and this in consequence of a circumstance which it is important to mention—namely, that at this point the border of the flap was ecchymosed at the time of union. The other operations have not, I think, been hitherto sufficiently tried.

SECTION IX.

FALSE PASSAGES.

THE following article is a translation of a note by M. Ricord, on the subject of false passages, in the French edition of Hunter's works. As it is complete in itself, I give it in the words of the French professor.

“Every point of the urethra may become the seat of false passages, and we may meet with them throughout the whole course of the canal. The fixed points, as well as the moveable ones, present frequent examples. It is certain, however, that false passages occur most frequently in the curved portion of the canal, particularly in the membranous, but they are met with in the prostatic portion, in the substance of the prostate itself, and at the neck of the bladder. Although they arise at the inferior border, still they may be seen at any point of the circumference of the canal of the urethra. They are of various dimensions, and may terminate in some neighbouring organ, such as the rectum; or, after having passed through a certain thickness of tissue, they may enter the bladder, either by its anterior wall, or, as happens most frequently after passing through a portion of the canal, behind the stricture, or in the body of the prostate; or still again behind that organ, by penetrating its lateral lobes, or the fundus of the bladder, in which case the instrument passes between that organ and the rectum, or reaches the former, having previously entered and passed again out of the intestine, as in an example mentioned by Deschamps.”

CAUSES.—There are numerous circumstances which predispose to the formation of false passages; as for instance, the greater or less resistance of the diseased parts;—the various directions which the urethra has assumed in consequence of abnormal or pathological states of the prostate;—the accumulation of fecal matter in the rectum. We must likewise consider as causes, the nature and situation of the stricture itself, as well as the state of the surrounding

parts, the kind of instrument employed, and lastly, the greater or less care used by the practitioner.

False passages are more to be dreaded, in proportion as a stricture is firm, callous, resisting, and little dilatable. The narrower the strictured passage, the more have we to fear the occurrence of this accident, particularly when the stricture is of considerable length, and when several are present; as the most anterior one necessarily interferes with the treatment or proper direction to be given to the instrument. Should the mucous membrane be subject to chronic inflammation, or should it be affected with *ramollissement*, perforations are very frequent, even where the softening is not very well marked.

The kind of instruments employed has a good deal to do with false passages. Flexible bougies produce them rarely, as compared with inflexible ones. The size of instruments also should bear a proportion to the stricture. Still in those cases which depend upon an hypertrophied state of the mucous membrane, or where spasm is present, it is better to employ bougies of a large size. As a general rule, however, the more the diameter of the catheter diminishes, the greater chance there is of the occurrence of a false passage. Straight and inflexible instruments employed in strictures, situated posteriorly to the bulb, have been frequently the cause of these accidents.

Allowing that instruments are more liable to produce false passages, in proportion as they are more pointed, as in the instance of conical bougies, the use of which has been too much condemned; still the lesions they produce are less severe than those which result from the employment of instruments of a larger size, and whose volume bears no relation to the strictured part. In fact, in the one case we have only a simple perforation, or a species of acupuncture; whereas, in the other a rent occurs of a considerable extent, together with a tearing away of the edges themselves. Pressure on the anterior part of the canal, as recommended by Hunter, and cauterization, as well as the operations we have previously described, may cause these perforations.

But, in fact, the most frequent cause of false passages probably lies in the hand which directs the instrument. A want of anatomical knowledge and practical skill, or too great haste, has often been the cause of accidents which might easily have been avoided, independently of the existence of other predisposing causes.

To avoid false passages, let the surgeon hold the bougie as short as possible, in order that he may more effectually be able to appreciate the obstacles which he has to overcome, and the direction the instrument should take; let him draw the penis towards the instrument, in order that tension may be exerted on it, and thus obliterate the *cul de sac* which is frequently seated in front of the stricture. Let him follow externally the direction given to the bougie while it passes the perinæum; let him introduce his finger into the rectum to guide the instrument as it passes along the prostatic portion, and take care that it does not deviate on either side; let him employ less force in proportion as the instrument passes with difficulty, and only push it forwards when he has assured himself that the point is in the stricture.

Such are the directions for introducing the instrument in difficult

cases, which, if attended to, and followed up by a judicious selection of bougies, will tend to the prevention of those accidents which unfortunately are of too common occurrence, particularly when ignorance is combined with a desire of display by rapidity of execution.

The SYMPTOMS of a false passage consist of various ill effects which the patient experiences after the passage of an instrument. Among others, authors have enumerated hæmorrhage. This symptom is of little value. There are many patients whose urethra bleeds very easily without the occurrence of a false passage. In some cases bleeding results from a *ramollissement* of the mucous membrane. On the other hand, a false passage may happen without the occurrence of hæmorrhage, an instance of which M. Ricord mentions in his Lectures, of an old man who had a very severe stricture, of the callous form : several ineffectual attempts to pass an instrument were made by a practitioner, and the spectators were not a little surprised, in one of these attempts, to observe the point of the instrument protruding beneath the skin near the ischium. No bleeding followed in this case, and yet no doubt can exist that a false passage was made.

Various sensations on the part of the patient are of an equally doubtful nature ; some patients exaggerate their sufferings, declaring that they feel the point of the instrument pricking them, particularly at the fossa navicularis, at the bulb and at the neck of the bladder,—circumstances which lead to the belief that these lesions occur where none exist. Other patients, on the contrary, suffer less than might be expected, and the instrument may penetrate the walls of the urethra without the patient being sensible of it. Nevertheless, when a patient feels a sense of tearing or of pricking, it is an additional reason for the surgeon to be more careful than usual. Generally speaking, patients suffer more when the bougie passes by a false opening than when it enters the stricture ; the sensibility of the latter is not so great as has been represented. Be this as it may, it is likewise certain that a bougie once in the false passage, remains there with less pain than when it is introduced and left in the stricture.

With respect to the resistance felt, it has been remarked that in the majority of cases the sound parts resist less than the morbid, and the surgeon may in many cases be deceived by the facility with which his instrument passes. That sensation of tearing, which the patient and surgeon both feel, may depend upon the rupture of one of those brides of mucous membrane above spoken of, or a sudden abrasion of the strictured part, as well as a rupture of the parts in front. Nevertheless, when we have once entered a strictured orifice, the instrument is felt as if firmly grasped—a circumstance which never happens when a false passage has been made.

The absolute direction of the instrument in relation to the axis of the urethra, the possibility or not of executing rotatory movements with curved instruments, supposing them to be in the bladder, the fact of urine passing out by the catheter, when this instrument is employed, are symptoms upon which but little dependence can be placed.* Indeed, a false passage may be made when the axis of the

* Many surgeons have a belief that a to and fro movement of the catheter proves that the instrument is in the bladder ; and, that the absence of water in the viscus,

urethra is closely followed, and the instrument may reach the bladder by one of those routes of which we have above spoken, without the surgeon being cognizant of it, unless it is by the occurrence of certain symptoms which, fortunately for the patient, do not always follow. On the other hand, without having deviated from the ordinary passage, the instrument, embraced tightly by the stricture, and shackled by a bladder which from thickening of its walls has become diminished in size, may give the surgeon an impression that it is taking a wrong direction, particularly if the eye of the instrument be momentarily blocked up by mucus or blood, thus preventing the passage of the urine. In addition to the signs above given, we may add, that little value can be placed on the impressions of the *porte imprimée* of Ducamp, or on wax bougies. The same observations apply to the finger introduced *per anum*, and particularly the greater or less degree of tightness with which the instrument is held.

SYMPTOMS.—The accidents which follow as a consequence of false passages are not so severe as some authors, especially Hunter, have stated.

As long as patients can empty their bladder, and no retention of urine exists, and when the false passage has been made with an instrument of small dimensions, or the lesion only exists between the bladder and the stricture, a false passage is to be considered as a circumstance of little importance, and one which may pass without the patient or the surgeon paying any attention to it; such, in fact, occurred in the case above mentioned as having been seen by M. Ricord. It is sufficient, when we are aware of the existence of a false passage, to allow our patient to remain quiet some days, without having recourse to a fresh introduction of instruments; the parts consequently cicatrize, the stream of urine, from the position and direction of the false passage, tends rather to bring together the walls of the latter than to introduce itself into it, except in cases where the lesion is made from behind forwards, as may occur when a bougie turns upon itself, and makes a false passage in front of the stricture.

In cases where the parts are forcibly torn, or where the employment of large sounds has produced abrasions, or caustic has destroyed the tissue, severe inflammatory accidents may arise, which may be either of a local or sympathetic nature. But as long as a false passage has not been brought into communication with the bladder, either through the means of the instrument which has produced it, or through consecutive ulceration, provided the patient can still make water, we may, by waiting and taking proper measures to combat the accidents, rationally hope to cure our patient. It is only in cases

is the reason why it does not issue from the catheter. Both these assumptions can be often proved to be incorrect. When a silver catheter has been introduced, sufficiently far to enter the bladder, I have seen surgeons often cause it to make a half-circle, and state that it is the walls of the flaccid bladder which impede its further action, and that, as the eye of the catheter is blocked up, no urine can flow. Let a stilet be passed in and out, and let the finger be introduced by the rectum, when any mistake may be rectified. Too frequently it will be found that the instrument is in a false passage. If withdrawn, and a catheter with a large curve be used, it often happens that urine passes off readily, to the surprise of the surgeon and his attendants.

of extensive lacerations, accompanied with a complete retention of urine, and which call for an immediate relief of the bladder by the catheter, or in those instances where the false passage communicates with the bladder or the rectum, that we have to expect the most serious consequences, and which call upon the surgeon either to puncture the bladder, or to combat those ill effects which result from the infiltration of urine. There are cases in which a false passage having been made, and the instrument having reached the bladder, everything goes on quietly, and shortly a new canal, provided with a false mucous membrane, results. In every case where there exists a false passage, the surgeon should recollect in what direction it has been made, and assure himself further of its existence by the *porte imprimée*; the exact situation of it should be ascertained—in cases where it has been caused by another surgeon—in order that our instruments may have a proper direction given to them, and that we may not fall into the same error.

As regards the TREATMENT, I have but few words to say. It is indicated by what has already been stated. In slight cases, we should withdraw the bougie, and wait till the parts have healed; in more severe cases every endeavour must be made to introduce a catheter, which should be left in the bladder. If the introduction of an instrument be impossible, M. Ricord states that he is not certain whether he would not make a false passage directly into the bladder rather than perform the operation above the pubis to relieve that organ, for we must resort to one or the other alternative.

SECTION X.

ACUTE AFFECTIONS OF THE PROSTATE GLAND.

ACUTE and idiopathic inflammation of this gland are very uncommon; they usually arise from, or are a consequence of, gonorrhœa. I have already, at page 52, alluded to inflammation of the prostate as a complication of gonorrhœa, but will here treat of the affection at rather greater length. An uncomplicated case is not often met with. I find, however, the following in my note-book:—

SYMPTOMS.—F. F., *setat* twenty-five, a bookbinder by trade, came to me at the Islington Dispensary suffering severe pain in the perinæum, shooting down the course of the left sciatic nerve; when he makes water the pain is increased to an intense degree; this pain does not extend along the canal, but to employ the patient's expression, appears confined to the fundament. The suffering is so intense, that the patient, whilst making water in my presence, was compelled once or twice to press the glans penis, in the hope of diminishing the stream. I may mention that he is not called upon to make water more frequently than usual. The bladder, at the time of my first examination, held from six to eight ounces of urine, which produced pain only while it passed the prostate, but a dull aching sensation was felt for some time after in the perinæum. Soon after the effort of making

water, and before he left me, my patient was seized with cold shivering; this is the second time it has occurred since yesterday. At the present moment there is no discharge from the urethra. The bowels have been confined since yesterday. On introducing the finger *per anum*, pressure on the prostate produced increased pain, but I could detect no increase in the size of the organ, nor heat of the part. The constitutional disturbance was considerable. This patient had contracted gonorrhœa about a fortnight before; five days since, he took aperient medicine freely, and the present symptoms gradually increased; he was quite certain he had taken no other medicine, and habitually walked some distance to his work.

It is not often that we meet with these uncomplicated cases, but their study is important, as it enables us to detect the disease more readily, and distinguish this affection from inflammation of the neck of the bladder, with which, I believe, it is often confounded, as they frequently occur together.

One of the most recent instances that I have met arose apparently from venereal excesses. In this case, however, the prostate was not solely implicated; I believe the vesiculæ seminales were likewise inflamed.

This patient, who had formerly been under my care, married, and in about a month came to me complaining of symptoms similar to those in the last case. The discharge in this case was of a peculiarropy tenacious character. His wife suffered from slight affection of the uterus. The complaint, there was no doubt, came on in consequence of the acknowledged excesses, and proved a very obstinate case. I need not say that separation *a thoro* is advisable; but as this direction will often be disobeyed, it is better to attain the object by recommending change of air for the lady, the husband remaining in town.

It should be recollected that in the

DIAGNOSIS OF ACUTE INFLAMMATION OF THE PROSTATE, the pain in the perinæum is increased on making water, and lasts some minutes after the urine has passed. But the patient is not frequently called upon to pass urine; he will put off the operation as long as possible from dread of the pain. *In the diagnosis of acute inflammation of the neck of the bladder*, on the contrary, the surgeon's opinion will be founded on the fact, that the patient is constantly called on to relieve the bladder, small quantities of urine only passing at a time, to the great relief of the patient, until the fluid again collects in the organ, when the pain recurs, and the same relief is felt after its expulsion.

THE USUAL COURSE of acute inflammation of the prostate is as follows. A patient who has been under treatment for gonorrhœa, and has neglected himself, or been committing excesses, comes to you complaining of the following symptoms, which are usually mixed up with those of inflammation of the neck of the bladder.

He tells you that the feeling of scalding is increased when the bowels are evacuated, and the spasm of the sphincter is sometimes so great, as entirely to prevent the introduction of the finger, which at all times painful, is now often impossible. Pressure with the finger introduced into the rectum produces the most violent pain when exercised on

the anterior wall of the gut, which latter is diminished in diameter. These symptoms, if unattended to, increase, and the patient, after more or less unsuccessful efforts, is unable to pass even a drop of water.

PATHOLOGY.—Lallemand has given us the best description of the post-mortem appearances of this organ, from the large opportunities he has had of examining it when in a morbid state. In disease of the prostate attended with *acute inflammation*, he found "the prostatic follicles gorged with thick pus, forming, by their assemblage, a firm and yellow body, similar to scrofulous tubercle; the surrounding cellular tissue was perfectly healthy, so that he could separate the lobes in their whole extent."

"In a more advanced stage, the prostate was *infiltrated with pus*, or a pultaceous matter, which, on pressure, issued out of the follicles in the form of little granules. In still more advanced cases, on slightly compressing the prostate, pus could be made to issue from all the excreting ducts; the organ contained likewise little abscesses of the size of a lentil or pea."

"The prostate may be three times its natural volume, and tear easily; its colour pale, and easily broken down, and it may, together with little abscesses, contain milliary tubercles in a crude state."

"The whole or part of the prostate may be in a state of suppuration, and may empty itself into the rectum or urethra by one or a number of small apertures, which may be follicles that have become ulcerated, and the envelope of the prostate may exist as a mere shell, the prostatic substance having been previously destroyed."—(*Lallemand*, vol. i. p. 71.)

The perusal, however, of many of his cases induces me to believe that scrofula had much to do as an exciting cause in this affection, and I suspect that in some of his patients, the acute inflammation and its results have been brought about by the elimination of tubercles, which have formed in the prostate, probably accelerated by the usual causes which develop scrofula elsewhere.

TREATMENT.—If a surgeon is called to the patient in the acute stage of the complaint, the use of leeches *in large numbers* applied to the perinæum, or cupping-glasses, warm baths, and opiate enemata, with gentle purgatives, will generally cause a diminution of the suffering, and enable the patient to make water; but frequently these means will only partially succeed; in other instances they utterly fail, and on considering the circumstances, this result is not so astonishing. A highly-coloured irritating urine has been accumulating in the bladder, this presses on the prostate gland, whose sensibility has been greatly increased by inflammation. The canal passing through its substance is swollen, and puffy, and spasm of the surrounding structures completely impedes the flow of urine. In these aggravated cases, the means above alluded to must not be too long relied upon; the deep situation of the inflamed structures prevents our remedies acting as they do in other parts of the body, and the importance of drawing off the urine becomes of such moment, that I do not now hesitate in recommending the early use of instruments, following them up by an antiphlogistic and soothing plan. Here again, how-

ever, the surgeon meets with difficulties ; he has spasm, a diminished canal, and an enlarged prostate, in addition to the pain felt by the passage of the instrument along the urethra ; and it requires very careful and delicate manipulation of any instrument to cause it to enter the bladder without producing mischief. Sir B. Brodie recommends the elastic catheter without the stilet ; this, in my private practice, has not succeeded, and I attribute the failure to an impossibility of tilting the point over the inflamed prostate. I have found no such difficulty with the silver catheter of a moderate size, taking care to draw the penis well forward, at the moment that the point of the instrument is progressing, and then depressing the handle to an extent that a novice is unprepared for. As soon as the water is drawn off, the patient's symptoms abate ; the urine will be found high-coloured, often tinged with blood, acid, and loaded with mucous or pus globules. On withdrawing the instrument,—and there is no occasion to leave it in the bladder,—a few drops of blood may follow, and a soreness along the course of the canal remains. In a short time the desire of relieving the bladder will recur, scalding accompanying the flow of urine ; still the stream will not be so small as may be imagined, particularly if energetic treatment has been in the mean time employed. Generally, however, recourse must be again had to the silver catheter. Although a little water may pass, we may often suspect that the bladder is unrelieved ; particularly when there is some pain above the pubes, and percussion on that region furnishes a dull sound, with desire to micturate frequently, and relief obtained only for a short time ; the occasional passage of the instrument will not only relieve these symptoms, but prevent any future disease of the bladder.

Under this treatment, with rest in the horizontal position, low diet, and opiate enemata, the patient will complain of less and less pain, but it will often be found that this affection disappears very slowly, and if not properly cured, may lay the seeds of chronic enlargement of the prostate gland, which we shall presently describe.

To add to the embarrassment of the case, inflammation of the testicle may ensue, produced, partly by the inflammation extending along the canal, and partly by the passage of instruments. Of course the most urgent symptoms must be treated, but such a complication has never deterred me from the use of the catheter, if it was thought advisable to relieve the bladder.

SUB-ACUTE INFLAMMATION OF THE PROSTATE.

This is the form of the affection most frequently met with in practice, and the two following cases may give the reader a good idea of the chief characteristics of the complaint :—

T. B. contracted gonorrhœa in 1851. He employed an injection which cured the discharge, but pain came on in the perinæum, which was similar in character to what had occurred two years previously, when he attempted to cure a former gonorrhœa in the same way. When called to see him I found the following

SYMPTOMS.—Discharge stringy and slight, pain in making water considerable, and referrible to the anus ; he compares it to a dull aching

when he draws up the sphincter, as in breathing or coughing ; when warm water is thrown up the gut, he feels a weight bearing on the prostate ; as long as he lies in bed no great inconvenience is felt ; pain is greater when the bowels are confined ; no pain on pressure in the perinæum.

In September, 1854, I was sent for to see M. C——, a man about fifty years of age, who was suffering intense pain, and striving every few minutes to pass water without avail. The history I obtained was as follows :—Whilst suffering from gonorrhœa, he was seized with diarrhœa, followed by retention of urine ; he was treated by warm baths and small doses of opium. These remedies not succeeding, catheters were introduced to draw off the urine night and morning ; but it was found that the patient derived little or no benefit from the evacuation of the bladder.

I made a careful examination of the patient, and satisfied myself that he was suffering from inflammation of the prostate. I desired that the use of the catheter should be discontinued, prescribed opium in almost intoxicating doses to be taken by the mouth, and warm baths with subsequent stupes of flannel wrung out of warm water. In a few hours the patient was very much relieved, and was able to pass his urine in a small stream, although it scalded him very much when passing over the inflamed membrane. These symptoms abated in a few days under a continuance of the same treatment. What would have been the consequence had the catheters been persisted in, I cannot say ; yet this case had been under the care of a very judicious surgeon. It serves to show that instruments are not invariably to be depended on.

CHRONIC AFFECTION OF THE PROSTATE.

SYMPTOMS.—This complaint is frequently the result of inattention on the part of the patient who has been suffering from the acute form ; in some cases, more particularly in elderly persons, it comes on very insidiously ; in other instances, patients who are labouring under some affection of the genito-urinary system, complain of occasional or constant pain of a dull aching character in the perinæum, which shoots forwards towards the glans, and causes the patient to draw forward and squeeze the penis ; this pain occasionally extends down the thighs and towards the loins, and sometimes uneasiness is complained of in the testicle. These symptoms increase when the patient gets his feet wet, or drinks over night any acid wine, or when he has committed any venereal excesses ; in a few days they go off, and return in a more severe form, and at shorter intervals.

On some of these occasions the urine is not voided so easily as usual, and the call to make water is more frequent ; the stream may be forked or stopped suddenly ; pain is often felt in expelling the last drops of urine, especially for the first few minutes after its passage. The pain is increased by connexion, and not unfrequently a few drops of blood may follow micturition. The bowels are often constipated. Should the surgeon introduce a catheter, an obstruction may be met with, or the pain the patient feels in the perinæum may become aggravated and last some time.

Surgeons often talk of enlargement of the prostate gland, and yet seldom satisfy themselves of its dimensions by means of the finger ; and when they do so, not having a very distinct idea of what should be its normal volume, the greatest mistakes occur. To avoid such errors let me recall a few anatomical relations to my readers' attention.

When the finger is introduced into the rectum of a person not subject to disease of the prostate, the calibre of the gut is often found large in consequence of habitual constipation ; if it be passed further up the gut, the gland will be felt anteriorly, forming a resisting firm substance ; if the finger be now turned laterally, an additional quantity of the gland will be felt, and an idea can thus be formed of what the natural condition of the prostate ought to be. The difference is remarkable in an old man who is labouring under chronic affection of the organ. The gland will be found two or three times its natural volume, and it will encroach so greatly on the rectum, that the finger may be passed almost round the gut. The passage of a catheter in either case will much aid the investigation.

In chronic affection of the prostate gland various discharges will be mixed with the urine, or may ooze out of the urethra. As the patient seldom empties the bladder completely, a certain quantity of urine will remain in the fundus, and this becomes high-coloured and ammoniacal, adding considerably to the irritation. The finger introduced *per anum* detects the prostate enlarged laterally, but particularly on the left side ; and if a catheter be introduced into the bladder, the prostate will present an unusual thickness.

The symptoms I have above described rarely occur in the child or adult ; it is usually in individuals advanced in years that we meet with them. Many patients who suffer from the disease are remarkable for their ruddy complexions and corpulency, but the affection is likewise seen in the pale or bilious-looking individual who leads a sedentary life. There is nothing, perhaps, which destroys the *morale* of men more than these complaints ; the sufferer is the wreck of the former individual.

COURSE OF THE AFFECTION.—Notwithstanding the severity of the symptoms we have described, the disease does not make very great progress, and persons live to a good old age in spite of it. Some surgeons have expressed the opinion that few men attain an advanced period of life without enlargement of the prostate ; and Sir A. Cooper considers it a salutary process when the affection produces a partial retention of urine, thus preventing incontinence, which would, in old people, almost constantly take place, were it not for this preventive.*

This disease has, however, a tendency to increase, notwithstanding all our palliative measures ; and complications and affections come on one after the other, until the patient sinks, either from exhaustion, or inflammation of the bladder, urinary fever, &c.

PATHOLOGY.—I have already alluded to the condition of the prostate, as far as we can detect it, during life, by means of the finger or catheter. Lallemand, in addition to the morbid appearances, which I have described at p. 142, says, "That he has found the prostate

* Sir A. Cooper's Lectures, page 521.

containing, instead of pus, a thick opaque stringy matter, resembling in consistence nasal mucus. The gelatinous mass may extend its filaments into the lacunæ, from which it may be drawn out like bird-lime. In size the gland may be voluminous, unequally knotted, and firm in consistence."—(Vol. i. p. 22, 49.)

Post-mortem examinations show that abscesses may occur in the substance of the organ, and open their way into the urethra; and then the urine, introducing itself, will increase the mischief, causing fistulous openings, and all the consequences alluded to under that section. In chronic cases, the middle or third lobe will be found considerably enlarged, and is detected as the cause of the obstruction to the flow of urine, or the passage of the catheter, forming a valve behind the orifice. In consequence, the course of the urethra is altered, and its calibre diminished; and if the lateral lobes are hypertrophied, the canal opposite the pubes is nearly obliterated. I have before stated, in speaking of strictures, that when any impediment occurs to the stream of urine, the canal behind it will become dilated: this circumstance happens in prostatic affections; not only is it dilated, but elongated; hence the necessity of employing a longer catheter than usual.

Sir E. Home, in his valuable work on the Prostate (a book I cannot too highly recommend to the notice of my readers, and one to which I am indebted for many practical remarks), says, that the surface of these enlarged portions of the prostate may become excoriated, and put on the appearance of ulceration. The mucous membrane which covers the middle lobe may be continued on each side in the form of a transverse fold.* Cysts may form in or about the gland, and acquire the size of oranges, their inner surface being lined with coagulated lymph.

The prostate will present great varieties in structure; in some cases we meet with it completely softened; in others it will have a scirrhus hardness.

The Prognosis is usually unfavourable, but of course much must depend upon the condition of our patient, the period at which we see him, and the complications which arise; every case will present varieties, but too often our treatment can only be palliative. Sir E. Home, at p. 69 of his work, says, "If attended to in proper time, the enlargement may in many instances be reduced, in others prevented from increasing, and, even in less favourable cases, rendered so much slower in its progress, that the patient's life is prolonged, and his sufferings mitigated to a very great degree."

Since the last edition of this book appeared, I have had greater experience in the treatment of this complaint, and I am not now so prone to make a favourable prognosis. It must not be forgotten that, if the patient is an elderly man—which is usually the case—we may ring the changes on opium, hydriodate of potash, alkalines, and other remedies with but little effect. It is vain to expect that, in advanced life, the third lobe of the prostate will diminish, particularly when an instrument is to be passed once or twice in twenty-four hours over a mucous membrane, the veins of which are more or less

* Sir E. Home, vol. i. page 162.

varicose, although the hand that directs the catheter be the most practised one. Indeed, this chronic affection of the prostate is only one of a train of symptoms which too often evince decline of the vital powers. If an old man begins to require his urine to be drawn off, the operation will very likely have to be repeated to the end of life ; and it is not surprising to find complications sometimes arising as a consequence of this frequent passage of instruments. Notwithstanding these unfavourable circumstances, if the elderly man have a good constitution, and if properly shaped instruments are employed, and care be taken that the urethra be irritated as little as possible, we may anticipate that in a few days or weeks, as the local inflammation subsides, the patient may at first be able to make a few drops of urine, and the quantity passed in natural micturition may gradually increase until the aid of the surgeon is no longer required. In a case of this kind, which I have had lately under my care, my patient found he was called on to pass small quantities of water very frequently at first, but by confidence on the part of the patient, and the employment of alkalines and bitters, the bladder became more tolerant. Still I myself feel that such patients should not be out of reach of their surgeon ; for the same causes which first brought on the complaint may cause its recurrence, and the pain and fruitless efforts to make water, in case of a relapse occurring, are such as must be very detrimental, if the surgeon be not at hand to relieve the bladder, which must be done at once.

THE DIAGNOSIS.—Sir A. Cooper says, “ The enlargement laterally may be readily ascertained by introducing the finger into the rectum, but the enlargement of the middle lobe cannot be so learned. In what way then ? Why, by the introduction of a catheter or bougie, and the latter is the best ; it will be found to stop suddenly. You are then to introduce a catheter for the purpose of drawing off the water ; the instrument will be resisted in its usual course, and you must depress the handle a good deal, with a view of tilting its point over the enlarged gland : thus the end of the instrument will be rising perpendicularly, as it were, behind the pubes.”*

TREATMENT.—I have had occasion in the last page to notice the valuable observations made by Sir E. Home on the subject of the prostate gland. I shall, in speaking of treatment, cite him constantly ; and although his work was published in 1811, modern surgeons have varied little the plans of treatment recommended by that eminent practitioner.

In the first stage of the disease, when no absolute obstruction exists to the flow of urine, great advantage may be experienced by cupping from the loins, or the application of leeches to the perinæum. These measures may be aided by a suppository containing opium (see page 78), and the internal use of Dover's powder. The hip-bath may be prescribed, of a temperature agreeable to the feelings of the patient. I need not here state that all causes which have given rise to, or can be supposed to aggravate the complaint, must be avoided. At this stage of the affection, the employment of bougies and catheters cannot be too much reprobated. When irritation has been alleviated, the

* Sir A. Cooper's Lectures, p. 524.

best effects may be expected from the use of hydriodate of potash, taken in doses of from three to ten grains three times a day. Frictions, with iodine or hydriodate of potash, on the perinæum, have appeared to me to be followed by a diminution in the size of the gland.

The following is a recent case that has come under my observation :

I was sent for into the country to see an elderly clergyman, who has been from time to time under my care, in consequence of passing small stones. I was informed by telegraph that he was suffering from retention of urino. In the belief that a stone had become impacted in the urethra, I went prepared. I found my patient in bed, not apparently suffering much, although he had not passed water for fifty-two hours. The history I received was, that he had left home the preceding morning in his usual health, had been sitting in a warm room for some hours as a magistrate, and on returning home on a cold day in an open carriage, had several times attempted to make water, but had not succeeded. There was great distension above the pubes, and on percussing the bladder I found it reached high up. The practitioner in attendance, not knowing exactly what was the nature of the complaint, had merely given some aperient medicine. I first endeavoured to pass a common bougie, but could detect no stone in the urethra, the instrument was arrested at the prostatic portion. I then took a silver catheter, but this would not pass readily, and a few drops of blood followed. I immediately withdrew it, and being prepared with gum elastic catheters, I chose the one delineated in the annexed woodcut.*



Gum elastic elbow catheter.

These are instruments I first saw employed in Paris, and are well adapted to turn round the third lobe of the prostate. I introduced it without the stilet, and to the great relief of the patient, drew off nearly a chamber pot full of dark-coloured urine. I have been obliged to repeat the operation with the same instrument ever since at various periods. It is curious in this, as in other instances, to feel how this kind of instrument insinuates itself into the bladder. I really believe no other form would succeed. On withdrawing the catheter, it appears to rotate on itself as it follows the course of the canal, in order to get round the corners, as it were, giving the patient no pain. The urethra, as in most cases, easily yields to the catheter, except at the prostate, and the flexibility of the instrument adapts itself to these peculiarities.†

Sir E. Home, who enjoyed such immense opportunities of treating these diseases, recommends that the instrument should be very soft and smooth,‡ to prevent its disturbing the urethra ; rounded at the point, and as large as the canal will easily admit, that it may the more

* The elbow of the catheter is represented in the cut as a good deal longer than it really is.

† I procure these catheters at Charrière's, in Paris, and can strongly recommend them to those who have to treat enlargement of the prostate in elderly people.

‡ Rynd recommends a silver catheter as being more manageable.

readily disengage itself at the turn into the bladder. The apertures in its sides should be wide, to prevent their being clogged with mucus or blood ; and the catheter should be pliant, that it may adapt itself to the form of the parts, and give little disturbance while retained in the bladder. Besides these properties, it is desirable that it should have a permanent curve at the point, even to a greater degree than is usually given to the common silver catheter ; and instrument-makers now manufacture them with a *permanent* and desirable curve, and they are far better than those which gain it by being kept on stilettes, and which, when warm, have a tendency to assume a straight direction.

The catheter should be introduced (continues Sir E. Home) either towards the right or left side, with the handle nearly in a horizontal line ; and when it reaches the membranous part of the urethra, the handle should be gently and gradually brought towards the perpendicular line, the point all the time being kept in motion ; and when it is nearly upright, the handle should be depressed : when the flexible catheter has no stilette, a good deal of dexterity is often required. The great advantage of passing the instrument in a lateral direction is, that the point may by that means be guided into the space between the lateral and middle lobes of the prostate, where there is a groove along which it may be directed, between these two projecting parts, into the cavity of the bladder. When the point is entangled in the folds of the mucous membrane, instead of repeating the endeavours to pass the instrument in the same direction, there will be an advantage in partly withdrawing the instrument, and trying to introduce it on the opposite side, where the same thing may not occur. If the catheter, with the stilette, cannot in this way be made to pass, it must be tried without a stilette ; and if it is still prevented from going further than before, a finger introduced into the rectum, and pressing upon the curved part of the catheter, may give it a right direction, so as to guide it into the bladder.

Sir E. Home recommends that the catheter be left in the bladder, if any difficulty has been experienced in its introduction. In respect to the position of the patient, his own comfort must be principally considered ; the standing position is, however, the best. The catheter may be then plugged, and kept in position by a common T bandage, the longitudinal band of which is divided up the middle into two portions, one of which lies in each angle between the scrotum and thigh, and furnishes a fixed point to which the catheter may be secured by ligature. The time that the catheter is to remain in the bladder must depend upon circumstances : it may be left three or four days, and then reintroduced and permanently kept there, or the water may be drawn off when required. The second introduction is less painful and difficult.

With all possible precautions, however, sometimes catheters will not pass, and yet the retention must be relieved or our patient dies. What is to be done ? I should in such case prefer pushing a piercing instrument* through the enlarged prostate, for the reasons spoken of under the head of relief of retention from impermeable stricture. The

* Liston says, "When enlargement of the prostate, whether of the whole gland or principally of the third lobe, presents an insuperable obstacle to the passage of

objections against paracentesis vesicæ, either by the rectum or above the pubes, have been fully detailed in the chapter upon infiltration of urine. It appears to me that less danger attends puncturing the prostate than any other treatment.

SECTION XI.

DISEASE OF COWPER'S GLANDS.

DURING the course of gonorrhœa, it not very unfrequently happens that an affection of Cowper's glands occurs ; it may come on imperceptibly, and the patient may take no notice of it until there is considerable swelling of the parts. This occurred in a case which I lately witnessed. In other instances there is fever and all the symptoms of abscess ; pain is felt in the course of the urethra, followed by fluctuation at one point, and difficulty in making water. M. Ricord considers that the affection commences in Cowper's glands, in consequence of the extension of inflammation, that pus is formed, and has a tendency to make its way outwards.

An abscess, however, may occur in the course of the urethra, in consequence of an abrasion of the mucous membrane, and a limited infiltration of urine follow (see page 124) ; the abrasion may heal, and a small abscess will result, situated close to the urethra ; if it occurs in or about the bulb, such a case will be almost impossible to distinguish from inflammation of Cowper's glands. To the finger this abscess will give the sensation as if it were attached to the urethra by a pedicle.

THE DIAGNOSIS.—It is, however, of great importance to distinguish these affections ; it may be done by recollecting that, when Cowper's glands are implicated, the swelling does not press on the urethra, or impede the flow of urine. The swelling is likewise placed laterally, and does not enlarge when the patient makes water. The reverse

the catheter, and when a surgeon has taken care to assure himself that such is the case, I conceive that he ought to perforate the gland in the direction of the natural course of the urethra, not with the catheter, but with an instrument better adapted for the purpose, a long canula or catheter with open end and very slightly curved towards the extremity, provided with two wires, one blunt and bulbous at the extremity, the other pointed as a trocar, both made so as to project a short way beyond the end of the canula. The canula is passed on to the resisting body, its orifice occupied by the bulbous wire, which is then withdrawn, and its place supplied by the trocar, the instrument being held steady in the proper direction. The trocar or stilet is pushed forwards along the canal with the canula, the former is then withdrawn, and the latter retained. This proceeding I consider quite safe in the hands of an experienced surgeon, one well acquainted with the urinary passages, but not otherwise. It is in every way preferable to puncture of the bladder above the pubes, to puncture behind the prostate, or to puncture of the prostate along with wound of the rectum."—"Elements of Surgery," p. 140.)

Rynd says, "The arguments raised against it (perforation of the prostate) are more formidable in theory than in practice ; all that need be insisted on is that the pushing of a catheter through the substance of an enlarged prostate is not necessarily followed by fatal consequences."—(Rynd, p. 179.)

happens when abscess bursts into the urethra, and the swelling is more general.

The PROGNOSIS is more or less serious, as we diagnose one or other affection. Mere enlargement of the glands of Cowper is a trifle compared with infiltration. (See p. 127.)

The TREATMENT must consist in attempting, by antiphlogistic means, to prevent the formation of matter ; or, if an abscess be present, unaccompanied with inflammation, we may reasonably expect to cause its absorption by rubbing the part with blue ointment. Should the skin become livid, not a moment should be lost ; it should be opened, and the matter allowed to escape ; the part will then heal like any other abscess, or an induration may remain, which it will be necessary to treat by blisters, &c.

SECTION XII.

EPIDIDYMITIS.

SYNONYMOUS TERMS.—In the older writers we find the term *hernia humoralis* frequently made use of. Astruc, in 1740, wrote "*De Tumore Testium Venereo, sive Hernia Venerea.*" Hunter, in 1784, employed the term "*swelled testicle.*" B. Bell, in 1793, treats of the affection under the chapter, "*Of Swelling in the Testicle.*" Swediaur, in 1809, speaks of "*tumeur des testicules.*" Sir Astley Cooper, in 1830, described the affection, terming it, "*acute inflammation of the testis, or testitis.*" M. Lagneau, in 1831, heads his chapter, "*Testicule Venerien.*" Mr. Wallace, in 1833, writes on the "*disease of the testicles :*" (complication of catarrhal syphilis.) Sir B. Brodie, in 1833, calls it "*acute inflammation of the testicle,*" but tolerates the term *hernia humoralis*. In 1836, M. Desruelles described the affection under the term "*orchite aigue.*" In 1836, M. Rochoux first called the disease "*vaginalite.*" M. Velpeau, in 1839, calls it "*orchite.*" M. Ricord, in 1839, has denominated it, "*épididymite blennorrhagique.*"

This affection ought rarely to be met with, at least in private practice. When it occurs under the care of the surgeon who has had the treatment of the case from the commencement, either the patient must have committed some indiscretion or the surgeon has not watched the case with sufficient care. The attack may be generally foretold, and in the majority of cases avoided. The disease generally occurs among hospital outpatients, who are either careless of their sufferings, or obliged to be on their legs all day long. In the army, also, swelled testicles appear not unfrequently, owing to soldiers trying to conceal their ailments, and quacking themselves with gin and gunpowder, and other nostrums.

SYMPTOMS AND COURSE OF SIMPLE UNCOMPLICATED CASES.—During the existence of gonorrhœa, it not unfrequently happens that a patient who is observant of his complaint, feels a pain in the perinæum, accompanied or preceded by a dull aching sensation in the groin, and along the course of the spermatic chord, ultimately becoming fixed in

the back of the scrotum, and he can often cover the painful part with his finger. He remarks that the gonorrhœal discharge is somewhat diminished ; when subject to nocturnal emissions, such a patient will feel great pain for some hours afterwards, but at this stage his linen presents no marks of blood ; the seminal discharge appears natural. When the surgeon sees the patient at this early stage, no swelling or affection of the organ may be present,—and twenty-four hours will elapse before they are evident in other instances,—the finger detects a distinct swelling confined to the epididymis, which is sometimes hard and painful on pressure : there is little or no redness of the scrotum, and the spermatic chord is often free from any thickening, although usually the vas deferens can be felt more distinctly than in the healthy state, and a feeling of pain is expressed when pressure is made in its course. In such a case, if proper treatment and rest be enjoined, the disease proceeds no further, and the patient rapidly recovers. If, from inattention to such slight inconvenience, the patient uses exercise, or goes about his ordinary occupations, the consequences soon become apparent ; the swelling in the scrotum increases, great pain is experienced on making the slightest movement, and the patient supports the testicle with his hand, so great is his fear of motion, which aggravates the pain in the course of the chord. At this stage he is often awake by great augmentation of pain from nocturnal emissions, and he is surprised at seeing his linen stained with semen mixed with blood. There is, however, occasionally some alleviation of the suffering after an emission.

M. Ricord states that he has seen pus intimately mixed with the seminal fluid. I have witnessed considerable augmentation of suffering in the dull aching pain in the perinæum when the patient goes to stool. A careful examination of the scrotum at this stage of the affection will show that there is not only redness of the skin with great augmentation of heat, but that effusion has taken place into the tunica vaginalis. If the surgeon, with the left-hand, embrace firmly the affected half of the scrotum, so as to render tense the testicle covered by its envelopes, and with the fore-finger of the right hand gently but suddenly press on the centre, a distinct feeling of fluid will be experienced, and the elastic body of the testicle will be felt below it. Should a lancet be thrust into the point where fluctuation exists, a clear or slightly turbid serum, varying in quantity, will often escape, and the size of the tumour will sensibly diminish. When the fluid thus contained in the tunica vaginalis has escaped, the greater portion of the remaining swelling is found to depend on the epididymis, which is hard and painful, and can be felt distinct from the testicle ; this appears to constitute the disease, at least in the majority of the cases. Effusion may not be confined to the tunica vaginalis ; we often see the subcutaneous cellular tissue infiltrated with serum, and become œdematous or phlegmonous ; inflammation may result, and distinct abscesses form. However, when intense suffering has preceded, shooting upward to the loins, when much fever is present, accompanied with hiccup, a tendency to syncope, nausea, vomiting, together with excessive sensibility of the apex of the swelling, we may affirm that the testis itself is the principal seat of the affection ; and if the fluid

in the tunica vaginalis has been allowed to escape, the testicle may be found hard, having lost its proper elastic feel, and seems to form a nodulated body which we are unable to distinguish from the epididymis.

The general or constitutional symptoms at the commencement are slight, but in the stages of the complaint last described they may be very severe, and have been occasionally confounded with hernia.* A furred tongue, hard pulse, pain in the abdomen, vomiting, constipation, &c., are all met with in the severer forms of the disease.

PATHOLOGICAL ANATOMY.—Patients labouring under this affection rarely die, as will be presently seen; but it occasionally happens that surgeons have an opportunity of observing the morbid changes which the testicle and its envelopes undergo, when a patient has been carried off by some affection of a more fatal kind. I cite below two instances of this disease where patients labouring under the complaint died, one in consequence of typhus fever, the other from an acute inflammation of the brain; and I may add, that all the cases observed since, by various persons, have confirmed the view here taken of the pathology. In a simple case which M. Ricord presented to the Academy of Medicine in Paris, the epididymis was affected alone. In another case, where severer symptoms had been observed, the tunica vaginalis presented traces of pus and false membrane. In the most severe forms, plastic lymph was effused among the seminal tubes. Mons. Gaussaile, late interne of M. Cullerier, at the Hôpital du Midi, has given the two following cases, which are to be found in the 27th volume of the *Archives de Médecine* for Oct. 1831, p. 189.

CASE I.—The epididymis was double the usual size, and hard. The testis of the same side presented twice its ordinary volume; this, however, was found to depend in great part upon an accumulation of a thick turbid serum, somewhat bloody, which flowed out when the tunica vaginalis was opened—the size of the testis immediately subsided. The tunica albuginea seemed thicker than usual; its surface presented a large number of minute vessels spreading themselves out in various directions on its surface. The substance of the testis presented no appreciable change; its consistence was somewhat firmer than usual, and the colour deeper.

CASE II.—The vesiculæ seminales larger than usual, and firmer to the finger; on the left side they were much injected, and of a dark-red colour, containing a large quantity of a yellowish-white substance, which was somewhat granular. Both the vasa deferentia presented similar traces of inflammation, and were filled with this same matter.

The epididymis on either side was voluminous; the surface resembled the colour of lees of wine, but this discoloration did not extend to the testis. The testicles presented their ordinary volume; some vessels were observed ramifying on their surface. A small quantity of reddish serum was found in the tunica vaginalis.

CAUSES OF THE AFFECTION.—These are of two kinds—the *pre-disposing*, and the *exciting* causes.

* See Pott's works, page 200, epididymitis occurring when the testicle was confined in the inguinal ring.

Predisposing Causes.—Under this head may be included fatigue, violent exercise, repeated sexual intercourse, and any circumstance producing excitement of the organs : authors have mentioned particularly excitement of the sexual feelings. A striking case of this kind lately came under my notice. A gentleman, who was about to be married, and who had been continent for three years, consulted me on account of an enormous swelling of the left testis, which had existed about a week ; he stated that his feelings had been very violently excited for some time past, and subsequent to each interview he had with the lady to whom he was engaged to be married, he experienced severe pain in the chord and testis. Involuntary seminal emissions, not unfrequently occurred during the night ; this, and the fatigue he then underwent, were the only reasons I could assign for the affection, which recurred from time to time, and was only permanently cured when he married. He is now perfectly well, and has remained so ever since. I have met with many other instances.

In 1852, I saw a young German with a soft enlargement of the testis which I could only attribute to an overloaded state of the vasa deferentia—in fact, seminal plethora—he came to me after consulting a quack. He was cured by strapping ; this a few years ago would probably have been put down to irritable testis.

Injections have been said to predispose to epididymitis ; this, however, I greatly doubt, unless when injudiciously administered. I should be disposed to assert that they very frequently are found the best means of warding off the attack. Of the impunity with which they may be employed, even under apparently the most unfavourable circumstances, I had some years ago a very striking instance. Mr. Langstaff brought a gentleman to my house who had ineffectually taken all sorts of remedies for gonorrhœa during four months, and had consulted the leading surgeons in the metropolis ; the patient was a delicate person, and complained of pain in the epididymis ; he had suffered from inflammation of the bowels, supposed to be produced by cubebs, and tenderness still existed in the right iliac fossa ; there was also urethral discharge. Injections of zinc had been formerly used ineffectually ; and latterly it was thought dangerous to employ them. At this period of the disease I was consulted, and notwithstanding the unfavourable aspect of the case, I employed nitrate of silver injections, and in ten days he was sent to Brighton quite free from the complaint, the epididymis did not even become swollen nor painful after the injection. This, like the case related at page 24, will doubtless be considered to have been rashly treated, but in the numerous instances which I have met with, I have never had cause to regret the plan.*

The proper precautions (see p. 66) should, however, be carefully attended to in using injections in such cases.

Daily observations show that various trades predispose to the affection ; we meet with it much more frequently among weavers, turners,

* I may here state that I no longer employ nitrate of silver injections with the same frequency as formerly, and I should not now attempt to cure a patient in this way until I had tried milder means, such as the passage of instruments and injections of tannic acid ; still I should not even now scruple, occasionally, to employ nitrate of silver if milder remedies did not succeed.

grooms, and those whose testes are liable to friction. Among other predisposing causes I should mention an habitually flaccid condition of the scrotum ; for any one may readily convince himself, that a strong cremaster and firm scrotum rarely are met with in individuals suffering under this affection. This is corroborated by the fact, that the left testis is more frequently affected by the disease than the right, which is sustained by the seam of the trouser affording it an adventitious support. Wet, damp weather seems to act in the same manner in predisposing to the affection, and may afford an explanation of the epidemic nature of the complaint at some seasons of the year.

The direct and exciting cause consists in inflammation of the urethra. Observation proves that this may take place by direct continuation of the inflammation along the vesiculæ seminales and vas deferens to the epididymis ; or these parts may escape, by virtue of a law common to many mucous surfaces, in virtue of which extremities of canals may become sympathetically affected, the intervening surface not perceptibly participating in the inflammation. There can be no doubt of the fact that the epididymis is often affected, whilst the chord remains perfectly free from disease.

The cause—viz., inflammation of the canal of the urethra—however seems to act in a manner that, *a priori*, we should not expect ; for the epididymis is rarely affected during the first week, or during the period when the inflammation is most acute ; from the third, fourth, and fifth week, this affection is most frequently met with. I take the following account from some statistical tables made by Mr. Gaussaile :—During the first week, three cases ; second week, four cases ; third week, five cases ; fourth week, sixteen cases ; fifth and sixth week, thirty-nine cases ; two months, two cases ; three months, one case. Now, as in the first fortnight, the inflammation although very severe, had not reached the deeper portions of the canal, being confined usually to the corpus spongiosum, it is probable that this is the reason why, at the early periods of the affection, the epididymis escapes. Such a supposition, however, is of some practical utility ; for if true, it leads to the practice of attempting to prevent the occurrence of the affection of the testicles, by putting a stop, by all active means in our power, to the inflammation before it has reached the prostatic portion of the canal ; it may moreover induce the surgeon to inform the patient who consults him about the fifth week, that an affection of the testes is imminent.

COMPLICATIONS OF THE AFFECTION.—The extension of the disease from the epididymis has been above spoken of, and I here mention the complications in the order of their relative frequency—the epididymis may be primarily or alone affected—then the chord becomes inflamed—next, the tunica vaginalis, giving rise to all the symptoms of acute hydrocele, which has been of late, in France, supposed to play so large a part in the affection I am now treating of. The next most frequent complication is oedema of the scrotum and chord. Lastly, the testicle may become implicated, causing the disease properly called orchitis or testitis.

TERMINATIONS OF THE AFFECTION.—When the epididymis alone

has been affected, provided the case is seen early and proper means are employed, that organ will speedily recover its normal structure and functions. It often happens, however, that a hard, nodulated mass remains, which resists all the usual methods of treatment, but which, in time, will become diminished in size, and the perfect function of the organ be recovered; however, for months after, great pain may be felt during sexual intercourse, and relapses may recur as a consequence. The effusion into the tunica vaginalis may, in some few cases, distend it to such an extent that it will form a hydrocele requiring an operation; in other cases, effusion of pus or coagulated lymph may take place, and induce all the consequences which follow such lesions; these terminations are, however, rare. The cellular tissue of the scrotum may regain its former condition, or the inflammation may become phlegmonous and give rise to abscesses, or induce a chronic thickening of the whole scrotum, which alters its appearance considerably. Lastly, the testicle may present the hard, irregular mass above spoken of, and suppuration occur. When the slough separates, the seminiferous vessels become unravelled, and appear as so many shreds at the opening; and not unfrequently a fungous growth sprouts out, a condition of the testicle which has been ably described by Mr. Lawrence. Lastly, the disease may cause the development of any latent disposition to tubercular disease in the epididymis or testis; and I have met with numerous malignant affections which the patients themselves attributed to an affection of the scrotum following gonorrhœa; here, however, there must have been some previous predisposition in the constitution which becomes fostered by the excitement produced by the disease in the epididymis.

It may be here remarked, that in good constitutions there is little tendency in the epididymis to suppurate, whereas abscesses may form in the testis itself, when the disease is improperly treated; but although the epididymis has little tendency to suppurate, it very commonly becomes hypertrophied, whereas after inflammation, the testis has a tendency to become atrophied.

DIAGNOSIS.—It would require more space than I can devote to this section, to point out the means of diagnosis between this affection and all those diseases with which it may be confounded; it is also unnecessary, as they will be hereafter fully discussed under the head of syphilitic affections of the testis. The cases of difficulty in acute affections which I have met with, have been under circumstances such as the following: a similar instance will be found in Pott's work on Hydrocele.

A young man, twenty-four years of age, was in the habit of amusing himself, while a boy, by pushing his testicles into the abdomen; one day the left testis did not descend as usual. Two months previous to his admission, he contracted a gonorrhœa, which discharged profusely; notwithstanding, he continued his employment, that of a wheelwright, a business which requires great bodily exertion: in about a fortnight after, he felt a painful sensation in the left groin, or a colic, as he expressed himself, in the loins; and this becoming worse, he entered the *Hôpital du Midi*, a month after the commencement of his complaint, suffering under great pain in the

inguinal region of the left side, which was much inflamed, and pressure on this part produced that peculiar feeling, but in a greater degree, which is excited when the testicle itself is compressed. On examining this patient, no testis was found on the left side of the scrotum; but, on passing the finger into the left inguinal canal, a rounded body was distinctly felt, resembling the testis in shape, and the patient stated that he experienced a similar kind of pain to that felt when the testicle on the opposite side was squeezed. Notwithstanding the vomiting which existed—the constipation of some days' standing, pain referrible to the abdomen, and a quick, hard pulse—the case was immediately considered to be the affection I am describing, varying only in the situation of the testicle within the canal. The treatment was such as I shall presently detail, and the patient did well, and left the hospital in a few weeks. I believe there are few surgeons who would not be able to distinguish these symptoms from those of hernia, although I do not know that the diagnosis, or rather the occasional complication, is mentioned, except in Mr. Pott's work on Hydrocele, who states that a practitioner sent for him to operate on a case of supposed hernia, which turned out to be one of *hernia humoralis*; should, however, a strangulated hernia occur in combination with this affection, there might be some doubt, and the operation, if attempted, would be rendered difficult.

The diagnosis of affections of the different parts contained in the scrotum, which become successively diseased, next requires our attention, particularly as the complications above alluded to have scarcely been noticed by English writers. On the subject of tumefaction of the epididymis, I shall not dwell, as from the time of Swediaur, in 1809, authors, with hardly an exception, have admitted that that organ participates the first in the affection. Thus Sir A. Cooper says, in his valuable Treatise on the Testis, that a swelling of the epididymis is a third effect of inflammation. He further says, "This portion of the epididymis (*globus major*) is more frequently diseased than any other part of the testis or epididymis."

Sir B. Brodie, in his Lectures,* states, "It (swelling) generally begins in the epididymis, and then extends to the rest of the organ."

To the diagnosis of effusion into the tunica vaginalis, although it is admitted by Sir A. Cooper to exist frequently, I do not think sufficient attention has been paid by the profession, and in fact, (as I have had many opportunities of observing when dressing under Professor Velpeau,) practitioners are seldom agreed upon the existence of the symptom. Fluid, when effused in small quantity into the tunica vaginalis, cannot be easily detected, and may be mistaken for a swollen state of the testicle itself, a thing of every-day occurrence; and this is a circumstance, I believe, which has induced English surgeons to speak of the affection as an acute inflammation of the testicle. My readers will therefore see, that the diagnosis of effusion into the sac, from inflammation of the testis itself, is not a mere quarrel about terms, or one of those fine-drawn diagnostic distinctions, but is a matter of great importance. When fluid is present in the tunica vaginalis, the surgeon may satisfy himself of its existence in

* *Medical Gazette*, vol. xiii., 1833-34, p. 219.

any of the following ways. I copy M. Velpeau's plan of detecting it from the French Dictionary of Medical Sciences.

"If a considerable collection of fluid exist, there will be a transparent state of the tunica vaginalis as late as the eighth day ; should it be turbid, or the tunic thickened, the next best means is to seize the testis at its root between the two fingers ; the thumbs should then be pressed on the two extremities of its anterior part, and the following sensations will be experienced : the sudden pressure will produce the sensation of a layer of fluid which sinks into a cavity, but is soon checked by a more firm and regular surface ; the other finger will feel, at the same moment, an undulation which raises it."

When the serosity is abundant it will often be detected by its transparency. But, perhaps, the simplest way is to puncture it with a lancet, an operation attended with no danger ; the escape of the fluid, though productive of no very good effect, (except in cases where the tunic is very much distended,) has never been, in a great number of cases that I have seen so treated by M. Ricord and M. Velpeau, attended with any accident.

Swelling of the testicle may, as Sir B. Brodie states, be usually supposed to exist from the severe pain felt by the patient, when the glandular structure of the testicle becomes inflamed within the cavity of the fibrous, unyielding *tunica albuginea* ; such a rational diagnosis, however, has not been considered sufficient by the surgeons above quoted. Having punctured the tunic, and allowed the serosity to escape, they then feel for the testicle, which, if inflamed, has, from reasons stated above, lost its peculiar elastic feel, and may be felt hard and inelastic, either partially or entirely.

On the diagnosis of effusion into the cellular tissue of the scrotum, I must beg to say a few words. Œdema may follow as a consequence of various affections. I have lately seen a case of eczema of the scrotum, with considerable œdematous swelling of its subcutaneous cellular tissue, rendering the scrotum so hard, that it required some time before I could decide whether the testis was free from disease ; rest, cleanliness, and proper treatment, however, enabled me to clear up this point. I mention the case, as its nature was mistaken.

One word more, and I have done with the subject of diagnosis : the œdematous swelling of the scrotum, when attended with phlegmon, may bring on abscess ; it becomes very important to open such abscesses early, and their diagnosis deserves some consideration.

The characters of such an abscess are the following :—The skin becomes adherent to some part of the epididymis or testes ; an indurated circle is formed around it ; in its centre distinct fluctuation may be felt, and this point is covered by the distended skin, which is of a darker colour than that of the surrounding parts. In fine, the bistoury should never be used unless these signs are present, otherwise we may run the risk of wounding the testicle, mistaking its elastic feel for matter supposed to be contained in an abscess.

PROGNOSIS.—That this is generally favourable appears from the preceding pages, and consequently there is no occasion for my discussing the subject at any length ; it will, however, be necessary to say a few words on the probability of the occurrence of the complications, or

of the speedy termination of the complaint. Seen at an early period, previous to the occurrence of swelling of the chord, the surgeon may usually assure his patient that the disease will be speedily relieved. But if the patient neglects himself, there is a great liability to relapse. I may here state that a virulent or mild gonorrhœa seems to influence little the prognosis ; this, as previously shown, will depend upon other circumstances. The chance of suppuration of the testicle taking place is very slight, unless the treatment be very injudicious. The effusion into the tunica vaginalis will, as Sir Astley Cooper has so justly observed, be speedily absorbed, and seldom degenerates into chronic hydrocele, or requires more than palliative treatment. M. Ricord, in a late lecture, reminds us that bleennorrhagic epididymitis seldom suppurates, orchitis frequently does. The former produces hypertrophy of the epididymis, the latter atrophy of the testis.

The patient is often anxious to learn if the testicle will recover its proper functions, and the assurance that this will occur, and that atrophy of that organ is not probable, will give him a degree of confidence not experienced except in cases of this affection where pathology shows that the most important part, the testis, usually escapes altogether : however, the surgeon should inform him that induration of the epididymis may remain for some months.

When nocturnal pollutions of semen mixed with blood occur, the same consolatory prognosis cannot be held out ; and when there is a scrofulous tendency in the patient's constitution, the surgeon should take care how he holds forth sanguine expectations of a permanent or speedy recovery, otherwise his treatment may be blamed, and his prognosis found to be incorrect. He should in such a case at least share the responsibility with another.

THE TREATMENT.—As every surgeon should have in view the prevention of the disease, the indications for affecting this must necessarily follow from a consideration of the causes which have been shown above to produce it. I may mention that a speedy cure of the gonorrhœa, previous to the third or fourth week, and the employment of a suspensory bandage, are the most effectual means of preventing this complaint, and they should never be omitted.

A most important precaution in this complaint, is to examine the urine of any patient who is considered at all liable to swelled testicle. I make all my patients pass urine in my presence, and if it deposits much mucus, I feel convinced that swelled testis or inflammation of the bladder is probable, and at once leave off injections and copaiba, and treat the case with essence of spruce, and prescribe opium suppositories till the urgent danger no longer threatens. (See p. 77.) In consequence of taking these precautions I now scarcely ever have to treat affections of the testis.

When epididymitis is coming on, or the attack is threatening, the patient should be sent at once to bed, and the scrotum enveloped in carded cotton, and thus supported on the thighs ; the most perfect rest should be enjoined, together with a brisk purge of calomel and jalap, and low diet. By these simple means, attacks of inflammation may be altogether avoided, particularly if the patient keep on his bed or a sofa for twenty-four or thirty-six hours.

When the disease has become developed, either in consequence of neglect or inattention on the part of the patient, or from recourse not being had to surgical advice, the following means will be found the most effectual in preventing its further extension, and relieving the complications which have occurred. Rest in the horizontal position is among the first and most efficient remedies : merely keeping at home is insufficient ;* repose on a bed or sofa becomes indispensable ; and the other means I am about to mention will afford little benefit, if the patient cannot lay up for a few days. In the acute form of the complaint, when there is great constitutional disturbance, abstraction of blood from the arm may possibly be called for, followed by the local application of leeches. On this subject I must beg to say a few words : leeches should, as a general rule, never be applied on surfaces which have a substratum of loose cellular tissue, such as the scrotum, eyelids, vulva, &c. I can recall to my recollection various instances of the very worst effects—such as erysipelas, œdema, ulcerations, and gangrene, following the application of them to these surfaces ; it is true that in nine out of ten cases these consequences may not happen, but the careful surgeon should avoid the risk, particularly since he should be aware that all the good effects, without the ill consequences, will follow their application on the groins or perinæum. He should not be thrifty of them ; a few leeches often do more harm than good in acute inflammation, and the patient does not save either time or expense. As Sir Astley Cooper has well remarked, patients are often, from their social position, unable to apply leeches, or they may be procured with difficulty ; under such circumstances the surgeon may with a lancet puncture the scrotal veins, and withdraw the requisite quantity of blood,† the patient standing before him ; cold and the recumbent posture will immediately check the bleeding. On the subject of local applications, the feelings of the patient may be consulted ; cold washes, or warm poultices, may be prescribed, or the testis may be enveloped with rags wet with a solution of opium, and covered by oil-silk. I need not say that aperient medicine must be given in cases of constipation, and a strict antiphlogistic regimen recommended. The scrotum should be supported by little pillows made of bran or cotton ; this position assists the return of the venous blood. The employment of tartar emetic in nauseating doses is undoubtedly of benefit in lowering the circulation, but alone it should not be relied on. In twenty-four hours the acute symptoms will usually have passed away, if the epididymis alone be affected ; and it is then necessary to employ compression of the affected part, in the manner I shall presently describe.

* In hospital and dispensary out-patients rest may be enjoined, but will not or cannot be maintained. In these instances I should strongly recommend the practice of enveloping the testis in wet rags, and giving the patients twenty or twenty-five drops of tincture of hyoscyamus every four hours, having previously purged them. This treatment is generally sufficient rapidly to relieve the affection of the testis. In private practice, however, this method has failed so frequently, that I should not advise its employment, unless the patient was unable to leave off his ordinary occupation.

† In my own experience I have found difficulty in obtaining much blood, and I seldom find bleeding necessary.

During a late visit to Paris (1859), I saw M. Cullerier treating the cases of swelled testis by freely puncturing with a lancet in five or six places the tunica vaginalis, and letting out the serum. No ill consequences are found to result from these punctures, but the patient finds instantaneous relief. A warm poultice, and the prone position completes the cure, particularly when the distension of the investing membrane is the principal seat of the disease.

In a lecture, reported in the *Gazette des Hôpitaux*, p. 181, 1848, M. Ricord says, "In some instances, if in spite of our treatment the disease increases, we should treat it still more actively; if the symptoms become again aggravated, and suppuration occurs, free incisions should be at once made. One of my colleagues, M. Vidal, has very properly recommended that the old plan of Jean Louis Petit should be employed. This consists in dividing the tunica albuginea so as to overcome the state of strangulation produced by the inflamed seminal tubes. If orchitis exists, this division of the tunica albuginea is an excellent plan, although the operation might alarm many surgeons; still it is a very simple affair, and puncture of the tunic often takes place in tapping hydroceles, without any ill consequences. We can readily imagine that the division, even in cases of a sound testis, where there is only epididymitis, may do much good, for a swollen epididymis may occasion strangulation of the testicle. The division should be made with a lancet, and extend one or two centimetres in length. Much alarm has been created relative to hernia and protrusion of the tubuli seminiferi, but experience does not warrant it."

English practitioners have probably never seen this treatment employed, and I should mention that I have never had occasion to employ it in private practice. To show, however, that it can be done with impunity, M. Marshall states, that the tunica albuginea, in a dog, was divided along the whole length of the testis, and the parenchyma of the testis cut into for some depth. The organ was replaced in the scrotum, and by means of sutures the wound was closed. Four months after the operation the testicle differed in no respect from the other. There existed the same volume, consistence, and sensibility in both testes; in fact, there was a complete anatomical identity, and it seemed as if this identity extended even to the function.—*Gazette des Hôpitaux*, 1847, p. 631.

One of the greatest errors in the private practice of the present day consists, I think, in not treating acute affections of the testis sufficiently energetically in the early stages, and in using antiphlogistic remedies too long. I meet with patients who have been confined to their beds for a considerable time with repeated applications of leeches, so that the strength of the patient is reduced, and yet the disease goes on.

In such cases the chord is not generally affected, but the body of the testis and epididymis are the seat of chronic inflammation, which might continue *ad infinitum*. I desire all antiphlogistic treatment to be left off, prescribe better diet, commence giving opium or hyoscyamus, followed by a light tonic, support the testis by strapping, and in a few days the surgeon may turn his attention to the cure of

the gonorrhœa by the ordinary means, which it is not my intention here to enumerate ; by doing this, the cause will be removed, and the effect will speedily disappear, and not be liable to return.

When the acute stage is complicated with considerable and rapid distension of the tunica vaginalis occasioning much pain, great relief will be instantly given by puncturing that membrane. When the chord is much swollen, poultices and leeches may be employed for a time, and compression should never be recommended.

In cases of abscess, I need hardly state that they should be opened as early as possible.

METHOD OF EMPLOYING COMPRESSION.—Compression is made on the testis by means of strips of plaster. The *emplastrum vigo cum mercurio*, of the French codex, is the preparation M. Ricord employs, cut into strips about an inch wide ; but common adhesive plaster answers equally well, provided it be spread upon mole-skin or some flexible medium, and not on glazed calico, which is very objectionable, on account of its not applying itself accurately to the short turns required.

The manner of employing the strips is as follows : embrace the affected testicle in your hand, drawing it, at the same time, away from the other testis ; then pass a strip of plaster around the chord, just where it is in connexion with the testicle, to prevent the testis escaping out of the scrotum ; this being done, the scrotum of the affected side will be applied closely upon the testicle, which presents an oval shape ; the strips of plaster marked 1, may then be applied in circular layers around the testicle, until all but the lower part is included. The latter may then be compressed by smaller and shorter strips (see Fig. 2), placed at right angles to the circular ones, which they thus maintain in their place. The testicle is now equally compressed, and the strips of plaster should be drawn tolerably tight ; the patient will usually complain of some degree of pain during the few minutes the surgeon is applying the strapping, but this rapidly disappears, and the patient expresses himself immediately relieved from a dull aching pain, which had probably existed a long time. He falls into a quiet sleep, and awakes entirely free from suffering. In exceptional cases, when the compression has been employed in cases unfitted for it, or when it has been ill applied, pain increases in the testis immediately. Compression should then at once be removed, and the antiphlogistic plan recommenced.

The annexed woodcut will better explain the manner of employing compression. Fig. 1 shows the strips of plaster passed around the chord and testicle. Figs. 2 and 3, the strips placed at right angles, to maintain the circular ones and compress the lower part of the swelling.

The surgeon should return to see his patient a few hours after the application of compression. He will probably find that the size of the swelling has so far decreased that the adhesive plaster has become quite lax, forming a shell around the shrunk testicle ; it is now necessary to re-apply fresh strips of plaster, at intervals of twenty-four hours, with the precautions alluded to above, until the swelling has completely subsided, which it will do in a few days.

The patient may be cautioned, that if during the night, after the first application, pain should come on, it is better to remove the compression. This pain arises from the diminished size of the testis having allowed it to partially escape through the ring formed by the first strip of plaster, and thus irregular pressure is exerted on it.



COMPRESSION OF THE TESTIS.

In cases where the scrotum is irritable, as it often becomes after a second or third application of the plaster, it will be well to place a strip of lint round the part of the scrotum where the pressure is excoriating the skin, and over that the compress, so as to relieve the pain, and enable us to continue the treatment.

With these precautions, compression is a most valuable means of relief in private practice, but it requires so much attention, that it is not adapted to the out-patients who attend dispensaries or hospitals, and our principal dependence must be placed on leeches, mercurial ointment, and plaster; and, above all, purgatives taken every morning, consisting of aperient salts. During a short visit to the French Hospitals last year I remarked that the treatment of strapping is not so generally employed as formerly; not that the French surgeons have less confidence in it, but practical experience shows them that inattention or carelessness may produce much mischief when the patient is not under the immediate eye of the surgeon himself. Cases have been cited of sloughing of the scrotum coming on, but this has depended upon the grossest negligence on the part of the patient or attendant, and tells, not against the plan, but its abuse. I can assure my readers that with the proper precautions, noticed above, the greatest benefit will result from its use. It is invaluable in many of those cases we meet with of gonorrhœa attended with slight swelling

of the testis, where, if copaiba is given, the testis swells; if copaiba is omitted, the discharge increases. I find that if I strap up the testis, I can safely give copaiba, and in a few days employ injections with perfect success. (See page 154.)

I have met with some rare cases where the very large size of the scrotum shows that the swelling depends upon effusion into the tunica vaginalis (which may be corroborated by a candle). Here I have punctured the serous membrane with a lancet, and allowed the fluid, to the amount of two or three ounces, to escape (repeating the operation at intervals of twenty-four hours) before applying the compression.

Pressure is, however, very prejudicial in all cases where inflammation is gaining ground, or when it has already become very severe; it is useless when there is great effusion into the tunica vaginalis, having then but a slight effect on the epididymis. When, however, the fluid has been allowed to escape, compression becomes a valuable adjunct; it should never be employed when the chord is affected with acute inflammation, as we are unable, from its position, to compress it completely; and I may here repeat, that there are no means so useless or prejudicial as inefficient or unequal pressure. I may say a few words on the supposed *modus operandi* of compression; although for the practical surgeon it is sufficient to know that it is beneficial, and in what cases it should be employed. Compression here, as in many other cases, has been supposed to act by retarding arterial action, and not permitting so much blood to come to the part; support, it is said, is given to the veins, and if inflammation depend upon or be followed by an enlarged state of the vessels, it is not surprising that compression should be of benefit. Pressure, moreover, not only is stated to prevent the further deposition of fluids and solids among the tissues, but it is supposed to excite absorption of such matters as are effused and not yet become organized.

By employing compression we rapidly get rid of those chronic enlargements of the epididymis which without it last many months, and the existence of which justly alarms a hypochondriacal patient; for whatever the exact position of the deposit, it must impede the secretion and excretion of the semen, and the loss of the organ or diminution of its size may follow, unless this symptom be attended to; and we must further remember, that it is more difficult to remove all foreign bodies in proportion to the time they have existed in any part.

The effect of compression is so successful, that we now no longer find in practice those numerous cases of chronic affections of the testis which are so fully described in books, nor do we have recourse to the thousand and one remedies formerly employed, but which compression has superseded. The only cases that present difficulties in the cure, are those in which we suspect tubercles, or in which previous disease has altered the structure of the part, or where stricture or gleet exists.

In all cases of chronic enlargement, the first thing I do now, is to pass an instrument to ascertain the condition of the urethra; if there be stricture, or an irritable condition of the canal, all other local remedies will fail, and our attention must be directed to relieve these lesions, the appropriate remedies of which have been already spoken of, and if at the same time compression be employed, the case soon gets well.

If we suspect tubercles, our treatment must be altogether changed, and the remedies proper for scrofula, which I need not here dwell upon, must be prescribed, and sea air recommended; but above all things, it is dangerous to treat such a case as syphilitic, the diagnosis of which will be fully entered upon in the section on that complaint.

Should a chronic thickening continue, or those nodules persist, iodide of potassium given with bitters will tend to remove them, and we need not fear to administer the salt from any dread of causing absorption of the testis itself. Loss of function of the testis is much more to be dreaded from blocking up the *vasa* than from any effect on the secretions by the employment of iodide of potassium.

Before quitting the treatment of chronic affections of the testis I would protest against the use of calomel and the different preparations of mercury. I am aware that this practice is recommended in some modern treatises. Now, as these chronic swellings usually occur only in the delicate and weak, on whom mercury acts, as often as not, most perniciously, I maintain that since they can be cured without a grain of the mineral, it ought never to be used. My experience is, that I have been able to cure all my cases without the internal use of mercury, often succeeding when mercury has failed in other surgeons' hands.

The following case shows the inutility of mercury in swelled testis.

A patient, in January, 1855, came to me with secondary syphilitic symptoms complicated with gonorrhœa. I recommended frictions for the constitutional syphilis, and as the discharge annoyed the patient much I prescribed copaiba and a lead injection. In about a fortnight after mercury was used, the testis became inflamed, and I confined the patient to bed. Salivation came on, but the inflammation of the testis did not abate. I relinquished the frictions in consequence of the salivation, and prescribed hyoscyamus with *Liquor Potass.*, and the testis recovered, but remained permanently smaller than the other.

Lastly, I must allude to the treatment of fungous excrescence of the testis, which in the present day is a very rare affection, and one which I hope will cease to exist in a few years. When called to such a case, I would advise the surgeon not to excise the prominent seminal tubes nor to apply caustic or compression, but to divide the stricture formed by the tunica albuginea, and having thus relieved the protruded mass of vessels, to compress them gently with strips of plaster, and no ill effects are likely to result. In these cases there need be no fear of further dividing the tunica albuginea; for we have seen that in acute inflammation of the testis (page 61) it is the best and only way of curing severe cases; and in this affection as the tunica albuginea has been already wounded, a little increased division can do no harm, and will allow of the return of the vessels. I may mention that I have reason to believe that a testis very much compromised in this way will perform its functions thoroughly, although not equal in size to the other. I lately had a patient under my care who had formerly suffered from this affection, and who came to me again with gonorrhœa. The testis of the same side as formerly was swollen, showing that at least inflammation will affect a testicle so diseased. I think the functions in both organs are perfect; indeed the anastomosis of the seminal vessels would lead us to expect this result.

SECTION XIII.

HYDROCELE.

INSTEAD of the effusion into the tunica vaginalis, spoken of in the preceding section, abating, and at once disappearing, the sac may become permanently filled with fluid, and the quantity so increase as to create a swelling as large as a child's head. This is what surgeons call hydrocele.

The SYMPTOMS are very marked, the weight of the tumour causes pain in the groin, and a dragging sensation, but, generally speaking, there is no pain in the swelling. If a lancet is thrust into the swelling a yellow thinnish serum spurts out, but as the opening closes, more fluid forms, and the swelling goes on increasing as far as the tunica vaginalis allows of distension. If viewed between the eye and a lighted candle, the swelling will appear semi-transparent, except in those rare cases where chronic inflammation has caused thickening of the walls of the sac. The testis will be found behind or to the inside, and may often be felt there as a hard resisting body—when pressure is suddenly made on the tumour. This affection will, if left to itself, last an indefinite length of time, and indeed seldom disappears without appropriate treatment.

The TREATMENT is now very simple. The distended scrotum should be seized with the left hand, so as to make the swelling tense, and, taking care that the testis itself is felt behind the swelling, as well as that the puncture about to be made does not wound any of the distended veins seen on the surface of the scrotum, a small trochar previously oiled should be thrust into the tunica vaginalis. In some instances the sac will be found very thin; in others, it is almost as tough as india-rubber, and resists strongly. On withdrawing the trochar the fluid will flow out of the canula which is left in the sac. By means of a vulcanized india-rubber bottle which fits accurately to the canula (I employ always one holding two ounces), equal parts of distilled water and tincture of iodine should be injected, and the fluid should be pressed in the sac so as to come in contact with the parietes. I generally allow some of the diluted iodine to escape before removing the canula, but leave about an ounce in the sac. The opening should be carefully closed by means of a little bit of plaster, and the patient should keep his bed. Immediately after the injection some pain is felt, referred particularly to the groin and spermatic chord. This, after a time, goes off, and is followed by heat, pain and swelling of the scrotum, which the patient is reluctant to touch. A certain amount of this pain is desirable, as without it we cannot expect to get the sides of the sac united one to another. The general symptoms of fever are slight, requiring only repose and a mild aperient.

About the third day the patient may get up and lie on a sofa, and at the end of a week he will be able to get about, the scrotum returning gradually to its original size. The testis remains unaffected, but at first care should be taken, as after the operation it is more readily exposed to injury in riding or taking violent exercise. I need not say that when once the sides of the sac are cemented together, no relapse of the hydrocele is possible.

SECTION XIV.

HÆMATOCELE.

I HAVE met with a few cases in which hæmatocele, or effusion of blood into the tunica vaginalis, has taken place in consequence of rupture of a vessel in the act of sexual intercourse, and I therefore shall give a short notice of it here.

The SYMPTOMS are as follows :—sudden distension of the scrotum ; weight in the part ; and absence of transparency. At first the swelling is soft and fluctuating, but afterwards the elasticity is lost, the swelling is firm and resistant in consequence of the coagulation of the blood, and the separation of the coagulum, which lies in layers like that found in aneurism. In old-standing cases, the tunica vaginalis is thickened to two or three times its original substance. Sometimes in the early stages local pain and feverish symptoms from the distension and inflammation of the sac may occur ; in other instances, the general and local symptoms may be very slight. The cases, however, of hæmatocele which arise as a consequence of sexual intercourse are generally slight.

THE PATHOLOGY.—In some cases an injury may cause rupture of vessels at the same time that the tunica vaginalis or albuginea is torn across. In other instances the effusion of blood is found to exude from the delicate vessels which inflammation has thrown out on and around the false membranes lining the tunica vaginalis.*

DIAGNOSIS.—Little need be said on this subject, as the rapidity with which the swelling forms, its want of transparency, and the weight of the tumour, clearly indicate the nature of the complaint. The means of distinguishing it when chronic from other affections of the testis, will be pointed out in the Second Part of this work.

TREATMENT.—If the surgeon is called in before the effusion has become great, the best plan is to strap up the testis in the way delineated at page 163. Such compression prevents the further effusion of blood, and causes what has been effused to be absorbed. When heat and redness are present, evaporating lotions may be employed, and rest enjoined. A small cushion of bran, or soft pillow to support the organ, as mentioned in treating of hydrocele, will give considerable relief. Puncturing with a lancet often alleviates local pain, and I should have no hesitation in adopting this method of letting out the more liquid part of the secretion, particularly if the inflammation runs high. Sometimes even the introduction of a trochar might be advisable. These slight operations may be performed with impunity, and afford great relief to the patient. In these cases incising the sac and removing the clots is not necessary, but it may be some time before the scrotum resumes its original size. The treatment proper for reducing these chronic swellings does not require any particular specification, for we must be guided by ordinary principles and the peculiarities of each case.

* In a case I recently saw the effusion probably took place externally to the tunica vaginalis, and was produced by rupture of a vessel in the chord.

SECTION XV.

IRRITABLE TESTIS.

It was, I believe, Sir Astley Cooper who first drew attention to the somewhat anomalous affection we have now to describe.

A patient complains of general or partial pain in the testis, he cannot bear his trousers to touch the organ, nor will he willingly allow the surgeon to make an examination: I have generally found one testis alone affected. An examination discovers the affected organ larger than the other, and we find very frequently varicocele on the side where the pain is complained of. The general health of these patients is far from good; they labour under the different forms of dyspepsia, and, day after day, return to see the surgeon, with a whole list of pains and fears, often inducing the medical man to think he is treating some visionary malady.

Such, however, is not the case, and the complaint deserves all our attention and sympathy for the patient, who often really suffers much without our being able to characterize the affection, otherwise than as a morbid sensibility of the organ.

Such a case seen a few years ago would have been characterized as irritable testis; now it may be called by the patient spermatorrhœa, or any name which he may have picked up from the advertisements in the papers.

Irritable testis seems to be better known in London than Paris. I do not remember ever to have seen an affection of the kind in the French hospitals, nor can I recollect M. Ricord having called my attention to the subject; but in private practice in London, cases come before us which bear unequivocal proof of the accuracy of Sir A. Cooper's description of the disease.

It betokens a morbid anomalous affection of the nervous system, under the influence of which the patient will accuse any organ or set of organs of being the seat of various painful sensations, from which he seeks relief.

The cause is not easy to be ascertained; sometimes it follows inflammation of the organ, sometimes the passage of instruments, at others it results from venereal excesses, and formerly lasted for an almost indefinite time. The indications I follow in the treatment, are first of a general nature. I prescribe for the dyspeptic, cold-bathing, the shower-bath, tonics, &c.; in fact, those remedies found useful in other nervous affections. But the greatest dependence I place on enveloping the testes in strips of mercurial, belladonna, and ammoniacal plaster; the pressure and the stimulating application appear to modify the sensibility of the organ, particularly when combined with change of air and attention to regimen; by these means you may alleviate the patient's sufferings, but the treatment must be continued for a long space of time, otherwise you run the risk of a return of the complaint as soon as the pressure is removed.

I have not seen atrophy of the organ, nor diminution in its function ensue from this cause, notwithstanding the obstinacy of the complaint.

If this local treatment fails, as it often does, in at once relieving the symptoms, we must look a little more closely into the case. If we find it necessary to examine the urine, or to pass a bougie, we shall usually at once discover sufficient reasons for the non-success of previous efforts. The treatment must then depend upon what affection is the real cause of the symptoms. Whatever the cause may be, these cases, which formerly were the *opprobrium medicorum*, are now, by improved diagnosis, and the giving up mere specific remedies, amenable to treatment.

SECTION XVI.

AFFECTIONS OF THE VESICULÆ SEMINALES.

SURGEONS have hitherto paid little attention to the affections of these receptacles, and I am well aware that in practice they are supposed to be seldom met with. I believe, however, that the following case is one which must be classed under this head. The rarity of the complaint induces us to give the history of the case, of which I have only slight notes. I may add, that I saw it in consultation with Dr. Bennet, of Grosvenor-street.

Mr. R—— was a married person whose wife was suffering under a chronic affection of the uterus. The husband was a delicate man, and at the time I was called in suffered from enlargement of the groin, which was probably scrofulous, but at the side of the scrotum a deep-seated swelling was felt as if situated in the direction of the vesiculæ seminales. To ascertain the exact position of the tumour I passed a bougie, but I could detect no connexion between the urethra and the enlargement. It, therefore, was not one of those swellings depending upon circumscribed infiltrations of urine described at page 124. Nor was it connected with the testis. I came ultimately to the conclusion that this was an instance of the rare affection of strumous disease of the vesiculæ. The recovery was very slow, as subsequently a discharge from the urethra came on, which resisted all the ordinary remedies, and at a later period the patient was seized with jaundice. I lost sight of him afterwards, as he put himself under hydropathic treatment, but within the last year I met him in the street in apparent good health. That the vesiculæ seminales may become inflamed in chronic inflammation of the urinary organs, I have little doubt; but I believe the symptoms they give rise to have so much in common with inflammation of the surrounding organs that it is very difficult to exactly characterize or distinguish them. Probably some of the most obstinate cases of gleet, accompanied with a glairy discharge, may depend upon inflammation of these little sacculi. In my own practice I have never been able to obtain a *post-mortem* examination of cases throwing any particular light on the pathology of the disease. For further information on the affection, I must refer the reader to my treatise "*On the Functions and Disorders of the Reproductive Organs in Youth, in Adult Age, and in Advanced Life*," where the subject is considered at greater length than is possible here.

SECTION XVII.

FUNCTIONAL DISORDERS OF THE SEXUAL OR REPRODUCTIVE ORGANS.*

SECTION XVIII.

VARICOCELE.

I HAD not intended treating of this affection, but the frequency of the complaint induces me to say a few words on its nature and treatment. Its name implies that its chief symptom is enlargement of the veins, and it is the vessels of the spermatic chord which undergo considerable dilatation as well as thickening of their coats that we have here to treat of; they feel often like a bundle of earthworms; and if a single one is rolled between the finger, it may be felt as hard and thick as the spermatic chord itself.

The CAUSES of this dilatation are often unknown, as the affection comes on gradually. Some men seem to have a predisposition to it, and it is well known that tall men are more subject to the complaint than short ones, as also persons who stand, walk, or ride much, rather than those who lead a sedentary life. Still, in others, these circumstances will never produce the complaint, nor will venereal excesses, although these are its not uncommon origin. Residence in warm climates is a frequent cause. Hereditary predisposition probably has a good deal to do with its appearance.

The SYMPTOMS of the affection are very varied. One man may have had varicocele for years without knowing it, another may have suffered only a short time, and the affection will give him great discomfort, such as pain, weight in the scrotum, and all sorts of morbid nervous local symptoms. It may also be attended with, or be symptomatic of general debility, hypochondria, or spermatorrhœa. These local symptoms are generally aggravated by connexion, and no doubt can exist that enlargement of the veins induces more or less debility of the generative powers.

The TREATMENT (in private practice at least) is generally very simple, and yet very effectual; it is to improve the general health by all the usual means. Sponging the body over every morning with cold water, particularly the scrotum and penis, and then applying a varicocele ring to the support of the vessels. This is done by drawing a portion of the scrotum through a pliable metal ring, covered with leather, about an inch in diameter, and then flattening the ring

* In the former editions of this book these affections were discussed here, and the heading is therefore preserved; but in this one space (which can be ill afforded) will not be engrossed by this subject, the more so as I have lately published a separate volume on "*The Functions and Disorders of the Reproductive Organs, in Youth, in Adult Age, and in Advanced Life*," where these questions are examined at greater length than is possible here. I must therefore refer the reader to this book, for my views of, and experience on diseases of the vesiculæ seminales, where also ample consideration is given to the subjects of *spermatorrhœa*, *impotence*, and other affections which properly come under the more comprehensive heading of that work.

against the scrotum ; by this means direct mechanical support is given to the vessels, and the testes are kept at a higher level than usual. The ring should at first be attached to a button of the trousers or drawers by a piece of string to prevent its being lost until the patient knows exactly the amount of pressure required. It should be taken off at night, and the patient had better have two or three rings ; or, when the leather gets saturated with perspiration and hard, it should be re-covered. Under this treatment I find few persons require any suspensory bandage, which seldom supports the testis *in situ*, and is open to the objection of keeping the parts very hot. If properly applied, the ring causes no inconvenience, and is a great boon to the invalid who resides in warm climates. Its introduction into practice is due to Mr. Wormald, of St. Bartholomew's Hospital. It is hardly so generally known or used as it ought to be.

The operation of tying the vessels in severe cases cannot be discussed in this treatise, and from what I have seen of it I should not recommend its adoption in private practice. Among the poor who are obliged by the nature of their daily occupations to stand for hours, the operation may be beneficial ; but from my own experience, I should say that the support of the varicocoele ring is usually sufficient. Even when vessels are tied, and the danger of the veins becoming inflamed escaped, there is a risk of other vessels in the neighbourhood becoming enlarged, and I am by no means certain whether these operations on the veins may not considerably interfere with the function of the testis.

SECTION XIX.

INFLAMMATION OF THE BLADDER.

AUTHORS who have specially treated of the affections of the bladder, divide them into *acute* and *chronic*, and speak of inflammation of the *neck* and *fundus* of the organ.

CAUSES.—Stone in the bladder, the passage of instruments, the extension of inflammation in gonorrhœa, may produce the disease in question, nevertheless in practice it is fortunately rare, and, when induced, generally arises from some indiscretion on the part of the patient. I have had reason to think, in a few instances, that large doses of cubebs have induced the complaint ; and Sir B. Brodie cites a case in which he thought even death was accelerated by the same cause. Strong injections, given in the inflammatory stages of gonorrhœa, may, I think, produce the disease, but I believe their influence has been very much exaggerated. The principal cause that I have seen most commonly give rise to inflammation of the organ, is indiscretion on the part of the patient, such as hard riding, catching cold, getting the feet wet, and venereal excesses during the course of a gonorrhœa. Lastly, I would cite gout and rheumatism, particularly the latter, as one of the most common causes of inflammation of the bladder. During the past winter I have had several patients suffering from gonorrhœal rheumatism, and in almost all I have found more or

less numerous symptoms of irritation at the neck of the bladder, and which it has been very difficult to relieve. Sir B. Brodie does not mention rheumatism as one of the causes; but at page 82 he says, "I have known much good to arise from the use of *vinum colchici*, thirty drops being given three times daily for three or four successive days." Dr. Prout says, "We also read of *rheumatic* and *gouty* inflammation of this organ. I have been informed that rheumatic and neuralgic affections of the bladder are well known, and not unfrequent in malarious districts bordering on the tropics, and I believe that I have seen a few instances of such affections in this country. In these cases it is probable that the muscular and nervous structures and their appendages are the chief seat of the affection. With respect to the gouty inflammation of the bladder, I believe there cannot be two opinions; and if we take the matter for granted, we must suppose that such inflammation attacks in preference that peculiar structure which is analogous to, or identical with, the structure attacked by gouty inflammation in other parts of the body. Whether the mucous membrane be the structure primarily attacked by gouty inflammation I do not know; I believe it is not: but that like the skin in other parts of the body, the mucous membrane (as in gonorrhœa for instance,) is only secondarily affected."—(*Prout*, fifth edition, p. 367.)

The slightrness of the information given us by authors who must have witnessed such large numbers of instances of affection of the bladder, strikes me as very singular. I am constantly meeting with cases in which the complication with rheumatism arises, and I have already (p. 22) cited several instances in the course of the preceding chapters. It is sometimes difficult to say whether rheumatism or rheumatic gout is a complication of gonorrhœa, or *vice versâ*; they, however, do occur sufficiently often together to bear a particular relation to one another.

SYMPTOMS.—These have already been spoken of in treating of the complications of gonorrhœa, page 53; but I will again give a summary account of them. Pain of a dull heavy character is referred to the perinæum, extending to the rectum; pain may be complained of above the pubis, where pressure gives extra suffering. The desire to make water increases, in consequence of the bladder becoming inflamed, but little relief is felt after micturition, the patient complaining that he feels unable to expel the last drops of urine; he continues to strain, but no urine comes, only a few drops, consisting principally of mucus mixed with blood; painful tenesmus arises in the rectum, and the sufferings of the patient are very severe. The urine is usually slightly turbid; even when first voided it has generally an acid reaction, and on cooling* the sediment arranges itself throughout the whole mass of

* I have adopted a very good plan for examining the urine of patients, and it is one which I should strongly recommend to the notice of those who treat affections of the urinary organs. I have in my consultation room a little stand with half a dozen glasses of the shape of test-tubes, but made much larger; when I want to examine the urine I desire the patient to place one of these tubes in a little chamber utensil and to make water into the glass; I thus am enabled to obtain a specimen of the first flow of urine, and I may, if I please, collect the last drops (after allowing it to cool in the little stand), by pouring off the supernatant liquid, and examine at my ease the deposits, either chemically or microscopically.

the liquid like so many prisms, and then assumes an opaque semi-gelatinous appearance, and gradually falls to the bottom. The deposit presents the consistence of jelly, which in the slighter cases, on being shaken, becomes again diffusible in the urine, or in the more advanced stages assumes a ropy consistence, forming such a tenacious mass that the vessel which contains it may be inverted without the semi-solid mass being disturbed; this mucous deposit will be alkaline, although the supernatant liquid is acid; generally, however, the urine in these advanced stages is alkaline. In affections of the bladder the colour of the mucus may vary; it may be more or less clear and transparent, or assume a yellowish or greenish colour, or, from containing blood, may be red, brown, or dark coloured, and in the advanced stages, present an ammoniacal odour, or that peculiar sickly one characteristic of decomposing animal tissues.

I would caution the young surgeon not to be satisfied with one examination of the urine; it is a singular fact that urine passed at some periods of the twenty-four hours may not contain much of this ropy mucus, although at others it may be loaded with it. It would appear as if ropy mucus secreted by the bladder did not necessarily pass out as soon as formed, but occasionally lodged in the fundus, to be expelled only when it has accumulated to a certain amount.

The diagnosis of inflammation of the bladder should be made with great care, and too great caution cannot be exercised in deciding whether mucus is present in the urine. If healthy urine be allowed to cool in a glass tube, a small cloud of mucus will be seen suspended in the fluid in which little flocculi composed of the debris of epithelium may be entangled. Under temporary causes the quantity of mucus may be increased, but the practitioner must not treat this as disease, although in many of these instances the mucus may fall to the bottom of the glass. Another error arises from mistaking, in cases of gonorrhœa, muco-pus, or pus which the urine in passing along the urethra carries with it, and deposits on standing, for the ropy mucus symptomatic of inflammation of the bladder.

It is very desirable for the surgeon to ascertain the nature of these deposits.

Dr. Griffith thus gives in his manual the tests for pus and mucus.

"Pus is occasionally present in urine. When in large quantity, and unaccompanied by mucus, or when mixed with blood, it may be supposed to be derived from an abscess; but when mucus is in excess, or has preceded the pus, most probably it is derived from the urinary mucous membrane. When present in urine, it renders that fluid albuminous, and gives a yellowish or greenish tinge to a sediment it composes; it can be easily diffused through the urine by agitation, and may be readily distinguished from mucus by its want of tenacity or viscosity, and by the large number of globules which float in its albuminous liquid. When acted upon by caustic ammonia (or potash), it becomes converted into a viscid gelatinous mass."—(*"Practical Manual on the Blood and Urine,"* Part I. p. 48.)

"Pus is composed of two distinct parts; one of which is liquid, the other consisting of minute cells or globules, and both these are

essential to the constitution of true pus. If attention be paid to this fact, there will be no difficulty in distinguishing pus from mucus. It frequently happens, however, that we meet with an excreted substance which does not yield these two constituents, but still has the general purulent appearance; it contains the granular corpuscles in abundance, these give it the peculiar colour, but the vehicle in which they are suspended is not albumen, or if any of this substance be present it is but a trace. Mucus here occupies the place of the true purulent albuminous vehicle; the limpidity of pus being exchanged for viscosity and tenacity."—(*Loc. cit.*, Part II. p. 146.)

"If mucus exist in considerable quantity in the urine, it cannot be mistaken; its semi-transparency, viscosity, and gelatinous appearance being easily recognised. If pus exist in considerable quantity in the urine, it cannot either fail to be detected with readiness, by the granular character of the deposit, its ready subsidence, and this in the form of a yellowish layer, generally above the mucus, if the latter be present. Moreover the granular particles are shown by the microscope to be those of pus; the supernatant fluid being at the same time markedly albuminous, as proved by ebullition producing a white cloud, which is not dissolved by a drop of acetic or dilute muriatic acid. The potash or ammonia test can be of no service in those cases where there is doubt—generally those in which mucus is present in quantity, and the detection of the presence of pus is required—because here there are already gelatinous masses in the liquid; and it would be a matter of difficulty to decide whether the alkali produced more of them or not. The presence, therefore, of a granular deposit, readily diffusible through the urine, generally subsiding above any portions of mucus present, the latter being heavier, the recognition by the microscope of any particles of pus present, whereby any fallacy from the presence of epithelial scales is avoided, and the detection of the markedly albuminous state of the urine, will always render this an easy question. In these cases it must be borne in mind in the detection of albumen by an acid, that if the patient has been taking any resinous matter, as copaiba, cubebs, or spruce-beer, a deposit somewhat resembling that of albumen is thrown down; in such cases, unless albumen be really present, ebullition causes no precipitate; moreover the surgeon is led to discover the nature of the cloud at once, even if a knowledge of the ingesta is wanting, by the odour of the oleo-resinous matter simultaneously evolved on the addition of the acid."

Guided by these tests, the practitioner will often be enabled to decide if pus or mucus be present, but in other instances the urine may contain both of them; and in these, fortunately for the patient, the treatment that is good for the one is equally advantageous for the other.

If, however, it is not of so much importance to distinguish accurately between pus and mucus, the same cannot be said of the necessity of accurately distinguishing mucus from other deposits. The surgeon must be on his guard against mistaking a deposit of the phosphates for mucus. It often happens that these salts are thrown down in large quantities as the urine stands, and I find them not

uncommonly mistaken by practitioners for mucus; and a patient has been supposed to be suffering from inflammation of the bladder, because the urine deposits thick mucus as it is called. My readers will pardon me, perhaps, if I make a few observations on this subject.

The phosphates, composed as they usually are of ammonio-phosphate of magnesia, or the triple salt and phosphate of lime, are found frequently in urine, which when recently passed may be acid, although it will soon become alkaline. They are stated to be deposited in consequence of the solvent acid becoming neutralized, and hence these earthy salts are thrown down (as may be imitated by adding ammonia to healthy urine, when a deposit of the phosphates will occur). These earthy salts may be mistaken for mucus or pus, presenting as they do a white appearance. The test is easy enough, as the addition of a drop of any acid will cause them again to be redissolved.

In other instances the deposits thrown down will consist of the phosphates entangled and mixed with mucus; and the urine will have a very offensive smell, and has often been mistaken for ammoniacal urine, whereas litmus paper will convince the practitioner that the liquid has an acid reaction, and I need not say that the prognosis will be far less unfavourable than if really ammoniacal urine existed.

The practitioner occasionally finds a deposit in the urine which he mistakes for mucus, and which really consists of spermatic fluid. In some instances where the inflammation has reached the orifices of the vesiculæ seminales, these appearances in the urine are not uncommon, and deserve a few moments' consideration.

Notwithstanding my belief that discharges of semen are not so common as generally represented, still, no doubt can exist that semen in pretty considerable quantity may be occasionally present in the urine, and give rise to the mistakes above alluded to. On the diagnosis of this affection Dr. Bird observes, "If, however, we have a specimen of urine passed by a man which is cloudy and opalescent, reddens litmus paper, and does not become clear on the application of heat or nitric acid, the presence of spermatic fluid may be at least suspected, especially if the characteristic odour of that secretion be perceptible. Should a larger quantity of the secretion be present, it subsides to the bottom of the vessel, and may be recognised by its physical character. If mere traces of spermatic liquor only are mixed with urine, they may easily be detected by violently agitating, and allowing it to repose in a conical glass vessel for a few hours. On carefully decanting all the urine except the last few drops, the spermatozoa may be detected in the latter by the microscope. The addition of nitric acid will often produce a slight troubling in the urine."—"On Urinary Deposits," p. 271.)

DIAGNOSIS.—Having described the symptoms of the severe forms of the disease, it is not my intention to dwell, at any great length, on the diagnosis in these instances, as the surgeon will not fail to recognise them when they occur; but I may mention that it becomes difficult, in many instances, to distinguish inflammation of the neck of the bladder and prostate,* as the two often exist together,

* See diagnosis of inflammation of the prostate, page 141.

or the latter masks the former. This is, however, of no great practical importance, as the same treatment is proper for both complaints, at least in the commencement. The diagnosis of the less severe forms of affections of the bladder does not appear so easy; and in practice I find great differences of opinion existing as to what constitutes the affection in question, when it is not sufficiently severe to occasion a constant desire of making water, or the symptoms do not run high.

The following contrast of the symptoms of spasm and inflammation will generally assist us in our diagnosis:—"Cystitis, or inflammation of the bladder, is accompanied by all the symptoms of fever, while spasm is not. Pressure increases the pain of cystitis, not of spasm. The pain is unceasing in inflammation, that of spasm comes on in paroxysms. The pain in cystitis is burning, throbbing, or lancinating; in spasm it is oppressive, dragging, and resembling labour-pains. The constitution of the patient also should be taken into account. In the robust and sanguine, cystitis is the more probable disease; in the weak and nervous, spasm. These differences will rarely fail to direct us in well-marked cases; but where spasm and inflammation co-exist, which often, as above mentioned, is the case, it is always the safest plan to consider the affection as one of simple inflammation."—(*Prout*, fifth edition, p. 400.)

TREATMENT.—The more urgent symptoms may be relieved by fomentations, and leeches in large quantities, say eighteen to twenty-four, to the perinæum; or cupping glasses may be employed. I seldom have recourse to general bleeding, as I find that the disease rarely occurs in persons who could bear depletion to a great extent; and I usually find that the general constitutional disturbance depends upon the local ailment. Moreover, as gout or rheumatism so often complicate this disease, all heroic remedies are counter-indicated. Constipation must at once be relieved, and tenesmus will be benefited by warm enemata of gruel. When the bowels have been freely evacuated, opiate enemata may be given, and afford the greatest relief. This plan of giving sedatives by enemata, is not, I think, sufficiently appreciated by English practitioners. Dr. Prout says, "The irritation of mucous membranes in general, and particularly the irritation of the mucous membrane of the bladder, &c., seem to be less under the local and direct influence of sedatives than pain and irritation in many other parts. Hence we can seldom do much towards allaying the irritation of the mucous membrane of the bladder, without bringing the whole system under the influence of narcotics."—(*Loc. cit.*, p. 404.)

The plan I recommend is as follows:—After the rectum has been freely evacuated by means of tepid water, I desire about an ounce and a half of warm gruel, containing sixty or eighty drops of laudanum, to be thrown into the gut by means of a small enema-syringe, and retained there; after eight or ten hours warm-water enemata may be thrown up to relieve the bowels, or a gentle laxative may be given. These opiate enemata may be repeated as often as it becomes necessary. I know of nothing more certain in its effects than this excellent remedy when properly employed. Recourse may also be had to suppositories in the manner spoken of at p. 78.

Great relief will be experienced from very hot fomentations, baths, and rest in the horizontal position, with plenty of warm diluents, as barley-water, marsh mallow or linseed tea, either plain or with the addition of gum tragacanth, and orange-flower water. The most intense symptoms rarely stand out against this treatment, but it must be persisted in for some days.

Sir B. Brodie places great dependence on calomel and opium, and the late Dr. Prout was in the habit of recommending in consultation this plan of treatment, but in many instances of very severe affections I have cured my patient without having recourse to mercury, except in alterative doses, experience having taught me that the mineral has been unnecessary in inflammation of mucous membranes, and instead of abating, has often increased the secretion of mucus, which we are desirous of checking, particularly in the subacute cases. Neither have I derived the benefit I had been taught to expect from *Liquor Potassæ* and *Tincture of Hyoscyamus*, remedies which have been much vaunted in affections of the bladder. Of course, it is of great importance that the urine should not be strongly acid, as this will further aggravate the complaint; but it is very injudicious to prescribe alkalies indiscriminately, as may be inferred from what was said at p. 175. And the tincture of hyoscyamus should not be generally given; for it is a very nauseous form of medicine, not often borne well by delicate stomachs. We may, however, prescribe the extract when it can be depended upon, in five-grain doses; if this be objected to, I believe, as I have said, that opiate enemata are the best mode of prescribing sedatives. When it is thought advisable to employ opium internally, Battley's sedative solution or muriate of morphia may be given according to the urgency of the symptoms and the effects produced.

When the urine is strongly acid, we must render it alkaline by giving the bicarbonate or citrate of potash,* which are the best

* My readers will agree with me, I think, in appreciating the following observations, which my friend, Dr. J. W. Griffith, sent in answer to my queries as to the action of these salts on the economy, and which I insert in his own words:—

"It is a thoroughly-established fact, that the citrate, tartrate, malate, and acetate of potash and soda, when taken internally, are converted in their passage through the system into carbonates of their respective bases, at the same time rendering the urine alkaline, and causing a deposit of the earthy phosphates. Hence, if it be required to render urine alkaline, either of the above salts may be exhibited as a substitute for the carbonate or bicarbonate of the same base.

"Regarding an alkaline condition of the urine, it must be borne in mind that vegetable matters of all kinds have a special tendency to produce this condition, on account of their mostly containing one or other of the above salts; beer or wine is quite sufficient for this purpose. In irritable and nervous subjects there is a great tendency to the production of an alkaline state of the urine. The most troublesome cases are those, however, in which the alkalinity is produced by a morbid secretion from the mucous membrane of the bladder, as from the presence of a calculus, or simple inflammation of the bladder. If there be any active irritation, it is frequently found, as was first distinctly pointed out by Dr. G. O. Rees, that whilst the exhibition of acids increases the irritation and urgency of the symptoms, alkalies will restore the acidity of the urine, by remedying the morbid action going on in the mucous membrane, and thus produce permanent relief. In other cases, however, alkalies make matters worse; and benefit is derived solely from the exhibition of acids."

remedies for effecting the purpose. The following is the formula I frequently prescribe :—

R Potass. Bicarb. gr. xx.
 Syr. Aurant. . . ʒss.
 Aquæ destill. . ʒiiss.
 M. ft. haust. ter die sumend.

I generally, however, prefer giving the alkalies in a state of effervescence ; they are far more agreeable to the stomach of the patient, and the neutral salt, the citrate of potash, is found to be converted into the carbonate in its passage to the bladder.

R Potass. Bicarb. . ʒj.
 Syr. Aurant. . ʒss.
 Aquæ destill. . ʒiiss.

M. ft. haust. c. pulv. acid. citrici. gr. xiv. in statu effervescentiæ bis terve quotidie sumend.

This method of giving citric acid is a very good one, but to many palates lemon-juice is more agreeable ; and I prescribe it in the following manner :—

R Potass. Bicarb. . gr. xxv.
 Syr. Aurant. . ʒj.
 Aquæ destill. . ʒiiss.

M. ft. haust. c. succi limonum coch. uno magno bis terve quotidie.

If it is desired to affect the urine at once, a scruple, or thirty grains of citrate of potash may be given in a glass of water every four hours, which will immediately alleviate the more urgent symptoms.

These various means will be found far preferable to giving liquor potassæ, or the carbonate in a draught, combined with tincture of hyoscyamus, the usual way in which these remedies are combined.

Great benefit will be derived from the mineral acids instead of alkalies (see p. 175), and these will be best given with the infusion of quassia, as a diet drink ; or the same effect will be produced by prescribing them in the following manner :—

R Acid. Nitrici. dilut.
 — Hydrochlorici dilut. āā gutt. xx.
 Aquæ . . . ʒiv.

M. ft. mist.umat 4tam partem bis quotidie.

The quantity of the acids may be gradually increased until the quantity taken is trebled.

Having alleviated the urgent symptoms by the means just spoken of, we may at once administer the extract of the essence of spruce in the way and in the doses mentioned at page 77. As the urine deposits less mucus, the spruce should be gradually discontinued. When the inflammation of the bladder is abating, the discharge from the urethra, it will be found, again returns, and oozes out of the canal in a greenish or yellowish drop. At this stage I should have no hesitation in prescribing copaiba in capsules ; and when the discharge has nearly ceased, a mild injection is never followed by any ill consequences ; on the contrary, I find the best way of relieving irritation of the bladder, is to cure as speedily as possible the discharge from the urethra, which was the first cause of the symptom. Any increase

in the amount of mucus from the bladder should be carefully watched, and recourse again be had to the spruce and opium.

If the surgeon has reason to suspect rheumatism, he should at once employ hydriodate of potash.

One of the most marked instances I ever saw of rheumatic inflammation of the bladder, was at once relieved by hydriodate of potash, when it rebelled against every other treatment. The salt acted like a charm. I do not pretend that it is a specific in all cases, but I am convinced it does great good in many rebellious forms of the disease. Quinine, likewise, is highly beneficial in some instances, as well as the preparations of iron.

The *chronic affection* must be treated on a similar plan, but modified according to circumstances. One author speaks highly of Pareira brava; another recommends *Uva ursi*; a third vaunts *Diosma*,* as remedies for affections of the bladder. I have tried them all, and have been disappointed, and doubt if time has not done more than the infusion or decoction. As a placebo to those who will take physic, any or all may successively be prescribed; but I have much more confidence in the gum resins, and I usually recommend spruce beer made without ginger, as a diet drink, taken to the amount of two or three bottles a day, care being taken to employ good spruce, for there is much that is valueless; this beverage is very palatable, and in summer very pleasant. I have likewise occasionally prescribed a very pleasant drink, containing essence of spruce and lemon-peel, and one or other of these beverages has now superseded those nauseous old-fashioned remedies which have so long deluged the delicate and fastidious stomachs of the London dyspeptic.

Spruce Drink.

R. Ess. Spruce . . . 3 oz.
 3 Lemons *sliced*.
 Sugar 1 lb. 12 oz.
 Boiling water . . 2 gals.
 Let stand till cold, filter, and bottle.

In chronic inflammation of the bladder, when the mucous membrane secretes that ropy, thick, tenacious secretion spoken of above, and when the disease is uncomplicated with stone, stricture, or affection of the prostate, the greatest relief will be found from injections (by means of a double catheter) of cold water, applied every other day or oftener, if reaction does not take place. Sir B. Brodie recommends an injection of nitric acid, in the proportion of ten minims of the dilute nitric acid to two ounces of water.

Provided these means fail, and unfortunately failures are not uncommon, we must have recourse to the following plan of injecting the bladder with nitrate of silver.

To effect this, I pass a gum elastic catheter into the bladder, and draw off the urine, and then, with a glass syringe, which fits accurately

* Dr. Prout says, "They are of very little use when the irritation borders on inflammatory action on the one hand, or when the urine is decidedly alkaline on the other, and the beneficial effects are chiefly confined to the intermediate stages of the disease."—(*Loc. cit.* p. 404.)

to the instrument, I inject the whole of the following solution into the viscus :

R Argent. Nitrat. . ʒij.
 Aquæ destill. . . ʒiv.
 M. ft. inject.

The immediate consequences are, increased pain, which for the moment is very severe, the urine that is first passed is bloody, and some tenesmus is experienced. In a short time, however, these symptoms abate on the patient keeping his bed, and paying great attention to his diet ; at first no liquids should be taken, nor for the first few hours preceding the operation ; subsequently the usual quantity of tea or barley-water may be indulged in, and the various balsams, particularly turpentine or spruce, should be prescribed.

In a very few days the urine will contain less of this ropy mucus, and ultimately none will be noticed ; in other cases the injection may again be resorted to at the end of four or five days, and repeated until a complete cure is effected. We rarely or ever observe any of the ill consequences which might be expected to arise when injections are thrown into this important organ.

SECTION XX.

IRRITABLE BLADDER.

THIS, like the affection we have called irritable testis, is a very anomalous affection—rather a symptom than an affection of itself, yet one that perhaps requires a separate section. It would require greater space than we can devote to it to discuss and distinguish the immediate and indirect causes which lead to this affection, particularly the various conditions of the urine which may produce it. There are, however, certain circumstances attendant on irritable bladder which deserve the attentive consideration of the surgeon. In many cases gout or rheumatism may be the cause of the ailment. I lately saw a clergyman of considerable reputation in London who was subject to this affection, and one of his most distressing symptoms was waking himself at night by wetting his bed. In this, as in other cases, colchicum and alkalies were found quite effectual. Nervousness brought on by excesses, tobacco, or mental labour, will often give rise to the complaint. I occasionally attend a very able physician, who is often obliged to avoid society from this irritability of the bladder, and for the same reason cannot travel by railway. He can remain hours without requiring to make water, but if the idea once enters his mind that he may desire to do so, and be unable, the irritability of the bladder at once becomes intolerable. There is nothing peculiar in his urine to account for these symptoms, which arise from a highly nervous temperament. The remedy, of course, in such circumstances, is the constant use of a urinal. I feel confident that exercise, and particularly gymnastic exercise, with plenty of fresh air, less mental employment, and sponging, or shower-baths, would

effect a cure ; but my patient is reluctant to give up his mode of living, and so bears his annoyances with an occasional grumble. In some of these cases I should strongly advise a trial of the effect of cold-water enemata thrown up before going to bed. I have seen good effects result from this treatment.

SECTION XXI.

INCONTINENCE OF URINE.

By this term is generally meant that the urine passes away involuntarily, the person having no control over its emission. In children the urine passes off at once in sleep ; in adults it dribbles away sometimes drop by drop. Another partial form is where, after a man believes he has emptied the bladder, some additional fluid passes away, wetting his linen.

Let us first speak of

INCONTINENCE OF URINE IN CHILDREN.—This affection may come on in healthy children, but those of a nervous and highly irritable temperament are most subject to the complaint. At first the boy only wets his bed occasionally, but the bad habit may become established, and he may do it every night. Girls are less liable to the affection. Micturition thus abnormally performed takes place generally towards morning, and the child does it unconsciously. Such children are often found to snore much. In a case of this complaint which I attended, the child took its last meal at half-past five, went to bed at seven, was taken out to make water at ten, and yet during the night he would occasionally and quite unconsciously wet his bed. A close observation of these cases induces me to believe that this incontinence of urine is closely connected with dreaming, and is analogous to the nocturnal emission of semen in the adult, over which the patient has little or no control. I believe that the individual who wets his bed when a child, will be very liable to involuntary nocturnal emissions later in life. I cannot but remark on the absurdity of punishing children who wet their beds ; it is not one of those bad habits that can be cured by whipping ; in fact, I have some doubts if this treatment is not likely to increase the disposition, by determining blood to the parts, just as we learn from Rousseau that a whipping first caused him to have emissions. The future welfare of the man may much depend upon judicious steps being taken to remove the habit at its commencement. If allowed to go on without appropriate medical treatment, it rapidly gets worse and worse. In the year 1854, a lady brought her boy, 12 years of age, to me from a northern county, suffering from an aggravated form of this complaint. He was a self-willed but apparently healthy child. Every night he wetted his bed more than once, in spite of being waked up to make water, and even during the day he was liable to apparently involuntary micturition, as his shirt showed. Tonics, sea air, and aperients had been tried by the usual medical attendant without any effect or

even temporary relief. I suspected worms, but discovered none, and on examining the urine found it healthy. I could detect no stone on passing an instrument.

The difficulty, of course, in these cases, is to pass the instrument in consequence of the cries and struggling of the children.

The proper *treatment* consists in not allowing the bladder to be full at night. If the boy is habitually thirsty let him drink during the day, but the quantity of fluid taken at his tea should be gradually diminished. Indigestible food of all kinds should be avoided, and he should not be brought down to dessert. He should be taken out of bed the last thing, say at eleven o'clock, and a careful person see that he makes water, and empties the bladder. In the boy mentioned above, I believe that, when he wetted his bed, although he had been taken out of his cot, he had not thoroughly emptied the bladder, because he was too sleepy to exert himself; and towards morning he perhaps dreamed that he was called on to do so, and the irritation produced by water in the bladder, combined with the dream, caused him to micturate while almost or entirely asleep. For I believe that this incontinence of urine usually takes place when a child is half asleep, and towards morning; and as soon as he finds the bed wet he wakes in great alarm, and the fear of punishment makes him still more frightened, and positively tends to increase the ailment. I would again repeat that if a child wets his bed he should be handed over to the doctor, and not be whipped, since this is an affection over which his will has no control. It is an additional ground for seeking medical advice if the urine is not healthy. In such cases it must be rendered neutral, by appropriate remedies. A remedy that is almost a specific is now found in small doses of Belladonna. The following is a very good formula in which to administer it.

Ext. Belladonnæ . . .	gr. iiss.
Alcohol	℥ss.
Syrup. Tolutani . . .	℥j.
Aquæ destill. ad. . .	℥v.

'M. ft. mist. cap. coch. min. j ter die.

The mixture may be given for some days, and then left off, to be resumed should the incontinence return, but in most cases it will be at once effectual. Other appropriate means may then be taken to render the cure permanent, such as tonics, fresh air, sponging the body, exercise, &c., which are too well known to require further mention here.

INCONTINENCE OF URINE IN OLD AGE.—We rarely meet with this affection in the prime of life, except as a complication of stricture; but in old men, the dribbling away of the urine is not an uncommon accompaniment of the decline of the vital force, particularly in those who have committed excesses. In some cases we know that there is enlargement of the prostate, in others we discover that the want of control depends upon loss of nervous power. We meet with other cases clearly showing that in elderly persons water will accumulate in the bladder, which, instead of being properly emptied, always retains some urine; the old man often believing it is empty, when in truth it is left half full. Incontinence in these cases, of course, arises from a simple overflow of the urine.

For the various causes of incontinence various remedies must be employed. To know the causes is generally to know how to obviate them ; but in many cases incontinence in old men is incurable, and its inconveniences must be met by wearing in the trousers an Urinal made of India-rubber, which will, when kept quite clean, obviate much annoyance.

CHAPTER III.

BLENNORRHAGIA IN THE FEMALE.

THE reader should bear in mind that almost all the affections now about to be discussed, may occur in the case of the most modest female, whether single or married. Incontinence has little to do with these complaints. Although they are frequently met with among women of the town, the fact of prostitution cannot be considered as in any way the exclusive or even primary cause of the affections to which unchaste women are subject. Syphilis, of course, is frequently found among them, but we are not here treating of specific disease. It doubtless exaggerates affections to which the woman as woman is liable, and, as experience now demonstrates, these complaints occur in the female who indulges, as well as in her who does not indulge in sexual intercourse.

It has been urged that, though blennorrhagic affections might be found in hospitals devoted to the cure of prostitutes, Englishwomen of good character were generally exempt from them. This view is now, I think, to a considerable extent exploded, and it is admitted on all hands that the happiness of the purest family circle can be destroyed by complaints formerly deemed an accompaniment of, or judgment on the vilest forms of social sin alone.

The DEFINITION of blennorrhagia need not be repeated here. As the direct result of CONTAGION, it is very uncommon in females, and medical aid is generally sought for some of the lesions (to be hereafter mentioned) which arise *de novo* in the female organs of generation, and which may for a long time, and would still longer, have passed unnoticed, had they not produced urethral discharges in the persons with whom the females cohabit. Indeed, marital intercourse may be carried on for a length of time, without the disease in the female producing any affection in the husband. In some instances, he may escape altogether. But in most cases, a slight exciting or predisposing cause, such as absenting himself for a time, drinking freely, taking violent exercise, or over-free indulgence in sexual intercourse, will, as it were, render him obnoxious to the morbid influence he has hitherto resisted, and be followed by urethral discharges.

Nor does it necessarily follow, that although the male suffers from urethral discharge, he should communicate it to the female with whom he has connexion: I have known many instances in which men labouring under gonorrhœa have had connexion with healthy women, and yet the latter have escaped the contagion. This is not

so surprising when we consider that the vagina and os uteri are constantly lubricated and covered with mucus, sheathing the delicate membrane beneath, from the contact of the morbid matter. It is rarely, except in hospitals, that blennorrhagia, as the result of contagion, is seen. It may be laid down as a general rule, that women communicate many more gonorrhœas than they receive; in fact they originate the disease, and, unlike syphilis, we can trace blennorrhagia to its source, which we shall attempt to describe.*

The discharges in the female may come from the *Vulva*, *Urethra*, *Vagina*, or *Uterus*; either one may be affected separately, or the whole become implicated at or about the same time. To render the symptoms and treatment of these complaints more intelligible, I shall describe, seriatim, each form of the disease as it appears when uncomplicated, commencing with

* Discharges from the female genital organs under certain circumstances are not, however, confined to the human species, as the following case shows:—

"LEUCORRHEA IN A MARE. By H. J. FITTER, M.R.C.V.S., Wolverhampton. To the Editor of *The Veterinarian*. November, 1849, p. 604."

"DEAR SIR,—I send you a case of *leucorrhœa* in a mare. It is not a disease that is very prevalent in this animal, at least not so much so as *gonorrhœa*.

"I am confident that practitioners who have served apprenticeships in large towns, and eventually establish themselves in one, rarely, if ever, see a case of this description. In breeding countries and racing establishments, however, we sometimes meet with them. In any accounts, therefore, of cases of parturition, it is possible this case may prove of some utility.

"To distinguish *leucorrhœa* from *gonorrhœa*, it is necessary to attend to the following circumstances. In the latter the discharge is constant, but in small quantities; there is much itching of the pudendum, and swelling of the labia, and I have frequently seen also ulceration to a great extent of these parts. The mare is often at *œstrum*, there seeming to be in these cases an increased desire to venery; whereas, in *leucorrhœa* the discharge is irregular and in considerable quantities, and is neither preceded by nor accompanied with any inflammatory symptom.

"I was requested by Mr. Whitehouse, a gentleman living at Codsall, about six miles distant from me, to examine and give my opinion about a bay hackney mare labouring under a profuse discharge from the vagina. The discharge was of a thick yellow shining nature, and was issued to the extent of more than half a gallon per diem. The history of the case, of which Mr. W. kindly gave me the particulars, is as follows:—This well-bred mare was put to the horse called the 'Libel,' own brother to the celebrated entire horse 'Touchstone,' and about six weeks after exhibited discharge *per vaginam*. I know of several mares that were put to the same horse without having experienced any such contamination. The discharge collected within the *pudendum*, in the *fossa navicularis*, and used to come away in gushes from the parts. The sides of the vulva were agglutinated by the discharge forming incrustations around its orifice. The mucous membrane did not put on any appearance of inflammatory action, but seemed rather blanched. The discharge flowed in such abundance that it ran down the thighs. Could the discharge proceed from immoderate coition, or was it the effect of the large convexity of the horse not properly adapting itself to the concavity of the mare, beautifully as Nature has fitted them for each other? The organs of generation in this mare are evidently very small, and there is not a doubt but the force applied was the cause of setting up irritation in the membrane lining them.

"The mare was poor and emaciated; had a staring coat, and a large pendulous abdomen, though a fine frame, and was in estimation previous to her becoming diseased. The gentleman who kept the entire horse gave Mr. W. very little hopes of her recovery, he having had one die from the same cause."—(*The Veterinarian*, Nov. 1849, page 604.)

SECTION I.

BLENNORRHAGIA OF THE VULVA.

THIS affection closely resembles balanitis in the male, similar causes may produce it, such as inattention to cleanliness and excesses of all kinds. The same treatment is applicable to the cure.

As, however, the affection is not common in private practice, I shall translate the following passages from a valuable lecture by M. Ricord in the *Gazette des Hôpitaux*.

SYMPTOMS.—"This complaint may affect the epithelium of the mucous membrane only, or, gaining the deeper parts, may occupy the glands or follicles, or even the vulvar glands, which we have compared to Cowper's glands, and which, according to M. Moulinier, ought to be regarded as the organs secreting the venereal virus. In the first stage, before the eye can detect any local change, the patient complains of an unusual sensation in the genital organs, and sexual intercourse is desired; there is itching, redness, heat, and swelling. The secretion now becomes greater; at first it is but an augmented flow of the normal moisture, but soon it becomes irritating, and increases the inflammation. The discharge, however, soon takes on a muco-purulent character, and this is more apparent in proportion as the follicles become the seat of the disease. If the inflammation gains the deeper portions, considerable swelling occurs, which may assume an œdematous character, or become phlegmonous; when the nymphæ, naturally large, become inflamed, their size may increase to such an extent, that they may be protruded beyond the larger labia, and constriction of them take place, resembling what happens in paraphimosis. Not unfrequently abscess follows these œdematous swellings. In stout women, the complaint may extend laterally to the groins, producing a most offensive discharge, attended with an eczematous state of the skin. The inflammation may likewise gain the apertures of the vulvar glands, which M. Huguier has so well described, and may reach the parenchymatous structure of these glands, and they may be felt through the thickness of the labia, as little abscesses, or they may gradually disappear, or may form cysts, which are not unfrequently found in this situation.

"A very frequent symptom of vulvitis is the exaggerated sensibility of the vulva; this, however, is principally confined to young women. In long-standing cases of vulvitis, the passage may become narrowed so much as to produce a sort of stricture of the entire canal. This blennorrhagic affection of the vulva produces increased sexual desire, attended with secretions and lascivious dreams, which if occurring frequently, appear to weaken the patient considerably.*

"**TREATMENT.**—Among prophylactic means, cleanliness stands first. Vulvitis, like balanitis in the male, may come on in consequence of

* I lately witnessed such a case in a girl who had been sent to an asylum uncured of vulvitis; the disease became aggravated while she was an inmate, and she was discharged from the institution; the only treatment there employed had been a common injection, which of course could do little towards relieving her of this painful and distressing form of nymphomania.—W. A.

inattention to washing the parts. In the commencement a soothing plan should be employed, and separation of the surfaces attempted, followed by the use of lotions of nitrate of silver in the proportion of $\frac{3j}{\text{to } 3ij}$ of distilled water, with the addition of warm baths. Under these means a rapid cure results. If the inflammation has gained the deeper structures, the soothing plan is the best, or leeches may be applied to the groins. In other cases nitrate of silver lotions may be employed. If a phlegmonous condition of parts occurs, it may be better to rely only on depletion. The moment an abscess is formed it should be opened; for pus has a great tendency to burrow in the loose cellular tissue, and make its way to the rectum, perinæum, or vulva, and recto-vulvar fistula may result. If the abscess is seated in the vulvar gland, it should be opened early. There is only one circumstance which should cause us to pause, namely, when inflammation occurs around an already formed cyst. It would be out of place to give a detailed description of recto-vulvar fistulæ, but I may mention that great good will result from compression in the course of the fistula, together with injections of a strong solution of nitrate of silver, or cauterizing the surface with the solid caustic. This cauterization should be rapidly executed if you wish the parts not to retract; sometimes scarification of the edges will do good.

“As a consequence of chronic vulvitis, partial morbid secretion may be observed in the folds of the passage, particularly between the nymphæ and carunculæ. These secretions, which only become apparent when the surfaces are pressed, are very difficult to be got rid of by means of astringent injections or even caustic. They arise from the follicles which are hypertrophied, and being seated at a great depth, can only be reached through their narrow neck. To destroy these diseased parts, a narrow bistoury should be passed into the canals leading to them; a free opening having been made, the surfaces should be freely cauterized, or filled with lint.”—(*Gazette des Hôpitaux*, vol., 1848, p. 212.)

I have stated above that this acute affection of the vulva is an uncommon affection in private practice. In hospitals we not unfrequently meet with it, and if we can believe the tales of patients, it is surprising that the affection does not occur more frequently considering the excesses young prostitutes commit. The number of rapidly repeated sexual acts of congress which women of this class will sometimes allow is astonishing, and yet it is only occasionally that we see this consequence. I believe, however, that in private life many of these chronic discharges, together with abscess of the vulva, are created, or continued, by immoderate intercourse. It is now agreed among practitioners that some of the eruptive fevers in young children will produce this affection, more especially in cases where great attention is not paid to cleanliness.

SECTION II.

BLENNORRHAGIA OF THE URETHRA.

IN THE FEMALE.

CAUSES.—M. Ricord says, "The female as well as the male is liable to blennorrhagic urethritis; we may say that in her case there is something special, for we almost always meet with urethritis in the female only as a consequence of sexual intercourse; whereas vulvitis, vaginitis, and the other forms may come on independently of connexion, and may arise spontaneously; hence the urethral form of the complaint is much less frequent than the other varieties of disease of the female sexual organs just mentioned. The position of the female urethra furnishes an explanation of this exemption; for it can rarely come in contact with the discharge from the male organ, whereas the vagina and uterus are much exposed. Micturition frequently occurring, furnishes another reason why the urethra in the female is rarely attacked. As a question of medico-legal inquiry, however, it must be stated, that in women really affected with blennorrhagia,—that is among females constantly exposing themselves to contagion,—urethritis is not an uncommon complaint.

SYMPTOMS.—The affection commences by a pricking sensation or considerable itching. The urine scalds, and the desire of micturition occurs frequently. If the patients have been subject to the *whites*, they can distinguish the difference between the discharge which now appears and that to which they have been subject. The scalding may become very severe, a difficulty in passing water may arise, and even in some few instances, there is retention of urine; if the neck of the bladder becomes implicated, the desire of micturition increases, and we have pain and tenesmus, frequently blood accompanies the last few drops of urine.

The pain, which in the male is very violent, rarely, however, assumes the same severity in the female. If the patient has made water just before the surgeon examines her, although the canal is very large, it will nevertheless retain but a small quantity of discharge, and the surgeon, in making a strict examination should be careful that his patient has not recently passed water; this being satisfactorily established, let him introduce the finger into the vagina as far as he can, and then press the urethra from behind forwards; if muco-pus be present in the urethra, it will at once give evidence of its existence. This plan is the more necessary when the patient may have reasons for concealing the affection. The surgeon should likewise be aware that stains must be looked for on the back of the linen, and not, as in man, on the front.

Blennorrhagic bubo is a rare affection in men; it is a still less frequent complication in women; and even in vulvitis,—the analogous complaint to balanitis—it is of very uncommon occurrence. In acute cases the least pressure on the urethra, and consequently sexual intercourse, becomes intolerable. In these instances the disease runs through the different phases we have previously studied in the male

urethra, with the exception of chordee, which cannot occur in the female. When the acute stage has passed, the disease gradually declines, and the patient recovers entirely, or the complaint passes into a chronic state. Gleet may remain, to which patients pay little attention, in consequence of the situation of the parts. The affection may produce thickening of the walls of the urethra; induration of the canal, vegetations, or cicatrices may be left, as we noticed in speaking of urethral diseases in the male. Nevertheless, stricture in the urethra of the female is a very rare affection.

TREATMENT.—The same indications must be followed here as in urethral blennorrhagia in the male, with the exception of the treatment for chordee. Thus, injections with lead may be had recourse to by means of the syphon syringes we shall presently speak of at page 198; or alum and zinc may be substituted. In addition, the balsams, such as copaiba and cubebs, may be employed. In the acute stage antiphlogistic treatment may be prescribed, and demulcents recommended, but we should as soon as possible employ again the anti-blennorrhagics, lead injection, and the balsams.

SECTION III.

BLENNORRHAGIA OF THE VAGINA.

I HAD intended giving my own account of the symptoms and appearances of vaginitis, but M. Boys de Loury, surgeon to the St. Lazare Hospital in Paris, where the registered prostitutes are treated, has written so admirable a paper on the subject, that I have preferred translating it, to publishing what I had written from my own experience.

“Inflammation of the vagina may exist alone and without any complication. Let us at once state that the greater number of authors, even those who have written most recently on the subject, confound under the name of blennorrhagia, vaginitis with catarrh of the uterus. These two diseases are perfectly distinct; in fact, what analogy or relation is there between them? Are the symptoms of acute or chronic vaginitis identical with those attending catarrh of the uterus in its acute or chronic form? The diagnosis of these two affections is not a matter of indifference, and the therapeutical means will vary according to the case. And as we now possess so perfect a means of viewing the parts by means of the speculum, obscurity in medical language is no longer permitted.

“As we stated at the commencement, vaginitis is met with more frequently at this hospital, St. Lazare, than affections of the urethra. We notice it most frequently among young girls of fourteen to twenty years of age. After that age it is a rare affection, at least in a truly inflammatory condition, and we, in consequence, shall describe the affection as we find it in young girls.

“**SYMPTOMS.**—Vaginitis presents itself with the following characters: inconvenient itching or heat in the affected part; the vagina appears to the patient to be shrunk; she thinks that she experiences a swelling of the mucous membrane. Swelling does really exist, for, in fact, the

external sexual organs are tumified and everted ; this explains why the patient finds a difficulty in walking or even in sitting down. Women complain of pain in the vulva every time they make water, although no urethritis be present. On examining the interior of the vagina, we first remark pus lying between the folds, so that the canal, at the moment the speculum is introduced, presents two colours very distinctly, the furrows being of a yellow or greenish puriform shade, the projecting portions of the folds of mucous standing out in relief, of a vivid red. (See Plate II. Fig. 1.) The discharge almost always exhales a very foetid odour during the acute period of the disease. In the chronic stage this becomes modified, until no smell at all remains. If the pus is removed, the mucous membrane underneath it is found of a still brighter red. Sometimes erosions are remarked on its surface. These erosions present themselves in the form of red lenticular spots, similar to those we have described as existing on the neck of the uterus, and which give the mucous membrane a salmon-coloured aspect. (See Plate III. Fig. 1.) In some cases the disease occupies the entire vagina ; in other instances the two inferior thirds or even its upper half. In this latter case the os participates in the condition of the vagina, and assumes a brownish-red colour, attended with augmented sensibility.*

"Chronic vaginitis usually follows the acute inflammation of the vagina. The menstrual period, producing, as it does, a determination of blood to the sexual organs, increases the discharge at a moment

* M. Boys de Loury, in this excellent article, has not entered quite as much into the detail of the

PATHOLOGY of the blennorrhagic affections of the vagina as I could wish. I shall therefore, in this note, speak of the appearances I have found, referring my readers to the delineation of the lesions as they appear in my Plates. I may state that the appearances were drawn from actual cases under my care at the Ourcine Hospital at Paris, when I performed the duties there in 1839 ; and were picked instances out of the four hundred beds that that institution contains.

In vaginal blennorrhagia I have found the mucous membrane in its whole extent, or in isolated points, of a red colour. Great swelling, heat, and pain, unattended by any secretion, accompanied this state ; the whole condition was erysipelatous, and generally lasted a short time, and then disappeared. (See Plate I. Fig. 1.) I have seen other cases, presenting the first stage of catarrhal inflammation, give rise to a morbid secretion, the colour and consistence of which are very variable ; this difference seems to have no reference to the cause which has produced it.

In examining the vulva, vagina, or the neck of the uterus, I have observed the mucous membrane covered with papulæ or follicles (see Plate III. Fig. 2), more or less developed, constituting granular vaginitis, or utero-vaginitis.

To persons not conversant with this appearance I would point out the analogous condition to be seen in granular states of the eyelids in chronic stages of ophthalmia.

Sometimes the disease assumes the form of small spots, in size not larger than a pin's head, and isolated, or more or less confluent. In other cases, these papulæ look like granulations deprived of their epithelium ; lastly, they may assume a fungous appearance, or take on the form of vegetations.

On the same portions of the mucous membrane we have distinctly seen patches more or less numerous, and varying in extent, which have a striking analogy with the suppurating surface of the skin on which a blister has been applied, resembling the condition of excoriation noticed in balanitis in the male, which may be seen well delineated in Plate III. Fig. 1. M. Ricord has likewise witnessed a case in which an eruption of herpes phlyctenodes was present on the neck of the uterus and the posterior part of the vagina : lastly, we may find ulcerations of every description seated on the whole or any part of the surface of the genito-urinary mucous membrane. (See Plate IV.)—W. A.

when the surgeon hopes he has removed it ; we not unfrequently see women brought to St. Lazare with a most abundant yellow or green discharge, without complaining of the least pain. Baths, astringent injections, a few days' rest, suffice to cure these discharges, which, according to the statement of the women, follow every menstrual period. We should here remark that essentially chronic discharges exist, which—not habitually contagious—may become so under many sorts of excitement, particularly excess in drinking spirituous liquors. In consequence, the police often bring us women from the Barrière,* who present on examination a mere sero-mucous discharge, without the vagina being red or inflamed, the urethra presenting no marks of disease, and yet these women have infected a great number of soldiers, who subsequently suffer from gonorrhœa.

“The large number of patients sent to St. Lazare on account of chronic discharges, acknowledge as the principal cause, the abuse of connexion, an inevitable result inherent in their wretched calling ; but it does not necessarily arise from a cause so purely mechanical ; it depends in certain cases on a general constitutional state. On this account we meet with it in women of a lax constitution, with lymphatic temperaments, subject to catarrhal diseases, who are miserably fed, living in damp, badly lighted, or ill-ventilated situations. In the last case the mucous membrane of the vagina becomes the seat of a considerable alteration, it is hypertrophied, as well as the follicles which cover it ; it presents here and there spots of a brownish-red or livid colour. If we are surprised at the obstinacy of the complaint, which resists all the ordinary modes of cure, it is because this alteration requires an energetic treatment, which alone is capable of entirely changing the nature of the secreting surface.

“The discharge in chronic vaginitis is usually of a yellowish-white colour, more or less consistent, sometimes becoming greyish-white.† These chronic discharges are not usually contagious, although they may become so under certain conditions, particularly just before and just after the appearance of the menses.

* A sort of suburb outside the walls of Paris where the wine-shops exist.

† The DISCHARGES found in affections of the vagina are as various as are the appearances above described : the secretion may be serous, milky, mucous, purulent, or sanious, according to the greater or less inflammation present ; in no case, however, does it consist of that stringy tenacious mucus (a microscopic drawing of which is given at page 211) which always comes from the glands within the os uteri ; this secretion is often found in the vagina, but it always comes from the os uteri, out of which it may often be drawn. M. Donné, a French microscopical observer, has observed the trichomonas, an animalcule said to be peculiar to secretions of the vagina, in the discharge, but I do not know any practical bearing such a discovery has yet had. The secretion itself is acid, in this respect differing from the secretion of the os uteri above alluded to. Under the microscope various appearances are found, consisting of epithelium scales, mucus, or pus globules, in more or less quantities, but which form no practical guide.

The surgeon should be aware that the traces of a discharge are to be looked for, not on the front part of the linen, as in the male, but behind ; and if a woman keep herself clean by frequently washing the parts, or retaining a sponge in the vagina, he will with difficulty ascertain whether she be diseased or not. A narrow vulva may occasion an accumulation of the secretion in the posterior part of the vagina ; large quantities of feculent matter in the rectum, or a full bladder, will tend to the same effect, and thus the discharge escapes only when the patient makes efforts to go to stool or pass urine.—W. A.

"One variety of chronic vaginitis, which has been carefully described by Dr. Deville, (*Archives Générales*, 1844,) as *granular vaginitis*, but which more properly should be called *papular vaginitis*, (see Plate III. Fig. 2,) is a disease which is more difficult to cure than the last form described. This depends perhaps on the physiological cause which produces the affection in these women, for pregnancy exists in nineteen-twentieths of the women who have granular vaginitis.

"It is characterized by little round or elongated projections generally separated one from the other; they occupy principally the upper folds of the vagina. These little eminences are conspicuous in the vagina in consequence of their dark or brown-red appearance. (See note, p. 190.) It is in the posterior part and superior portion of the vagina that we meet with them most frequently. In other respects they are very indolent. The discharge in this variety of vaginitis is at one time white, thick, and creamy, at others yellow or green; it is always very abundant. We have principally observed this complaint in women during the last months of pregnancy, a circumstance depending no doubt on the abundance of secretion of these parts at that period. In no case have we observed them produce any unfortunate result on the pregnancy. As to the question of contagion, we should not like to affirm that the discharge would not produce contagion; we do not, however, think it complicated with a virulent principle, nor do we attribute it to impure connexion.

"This disease, which will last during the whole of the pregnancy, notwithstanding all our treatment, will disappear after confinement. We should likewise observe that we have seen simple vaginitis terminate at length in this variety of granular disease. According to the investigations we have made on the exact seat of these granulations, we think that they are nothing else than the papillæ of the vagina undergoing a kind of hypertrophy, and which may be compared to the papillæ of the tongue abnormally developed under particular circumstances.

"Vaginitis is not uncommon among young girls, depending as it does à *des attouchements réitérés*, on impure connexion, or on the organ which precedes the first menstruation. We observe it sometimes among the very young, so much so that we might believe the complaint to depend upon violence, or attempts at rape.

"We admit two species of vaginitis:

"*Simple Vaginitis*, succeeding irritating injections, excessive onanism, or connexion,—especially in young girls who have scarcely arrived at the age of puberty,—and the introduction of foreign bodies into the vagina, &c., and

"*Syphilitic Vaginitis*, coinciding most frequently with chancres and engorgement of the glands of the groin. We may observe that this last-named affection is less frequent than the former.

"Acute Vaginitis, when accompanied with an abundant and acrid discharge, is often complicated with redness, which extends around the meatus and the nymphæ. The mucous membrane lining the vulva is not ulcerated, but has a shining, polished appearance, with here and there red spots, which at first sight might be taken for slight

erosions. The mucous follicles placed on each side of the carunculæ myrtiformes are equally inflamed, and secrete a yellow pus, which further increases the irritation of the parts. This state of things may remain in a stationary condition a long time, notwithstanding all the means we employ. It is only after having cured the vaginitis that we observe these symptoms abate.

"COMPLICATIONS.—Vaginitis is complicated sometimes with urethritis, as we have already stated, and with inflammation of the whole of the pudendum. It is principally in girls under eighteen that vulvitis is observed. This last complication exists at least twenty times out of thirty. A complication still more severe, and which brings with it irreparable disorders in the genital organs, is the formation of abscess in the labia majora, an accident which it is almost always impossible to prevent, whenever irritation of the vulva or vagina is intense. It is in such cases that phagedena, produced by the inflammation which has extended from the mucous membrane lining the internal surface of the labia majora to the subjacent cellular tissue, comes on.

"Phlegmonous inflammation may attack both labia at once, or one only. During the occurrence of this complication we constantly remark in the groin of the affected side swelling of one or more ganglia. These phlegmons, which we observe frequently at St. Lazare, hurry through their periods with surprising rapidity, so that at the end of five or six days pus is already formed. If, then, we would avoid fistulæ communicating with the rectum, or which creep along the walls of the vagina, it will be necessary to put in practice the method of which we shall speak when treating of the complication of vaginitis.

"Bubo is a common complication of vaginitis. We may say, in a general way, that swelling of the groin is the result of inflammation which has crept along the lymphatic vessels to the inguinal glands; nevertheless we have seen some which have been of a syphilitic nature, and which have presented all the characters of virulent ulcers.

"Vaginitis, in certain instances, becomes complicated with internal inflammation of the uterus; that is to say, the uterine mucous membrane may become inflamed, and then the patient experiences in the hypogastric region, in the groins, and the lower part of the back, pain, which at first is dull, but which soon becomes more acute. The neck of the uterus is sensitive to the touch, and is swollen and red. It has a greater feeling of heat than when the vagina alone is affected.

"It is not uncommon to see, as a consequence of vaginitis, the os uteri become the seat of a brownish redness; it may even ulcerate, as we have frequently remarked. The ulceration occupies the whole surface of the os, the epithelium is scarcely removed, but it presents a dark red colour; the surface is slightly granulated. The erosion produces very little, or no discharge; sometimes there is an oozing of secretion.

"According to our statistics we find the average duration of vaginitis in the acute state to be thirty-three days, and that when complicated with urethritis, ulcerations, chancres, &c., it varies from

six weeks to two months ; and, lastly, that chronic vaginitis lasts from thirty to forty days.

“A remark of the very first importance should be here introduced. We have stated, in speaking of urethritis, that discharges from the female become suddenly suppressed much more rarely than in men. It must be admitted that such is the case, inasmuch as we have never seen it occur at St. Lazare during a number of years. Upon what does this depend ?

“Let us remark, that as often as there is metastasis of a discharge to any joint, the cause which has produced the discharge is syphilitic :* and how could it be otherwise ? Can we admit that a simple non-virulent discharge, which is the result of too great excitement, or of irritating injections, may be suppressed, and give rise to metastasis ? We think not, and do not believe that any such fact has been observed. But how can we explain this metastasis ? Is it a simple coincidence between the suppression of the discharge and the swelling of the joint ? We do not think so either. A general cause must be admitted, which under certain conditions—and which our means of investigation are unable to appreciate—may shift about at will and establish itself elsewhere. We found our opinion on the fact, that in a large number of cases, a mercurial course, given with judgment, cures the affected joint without any necessity of recalling the discharge to its original seat. But if matters take this course generally, there are unfortunate exceptions ; and, notwithstanding the return of the discharge, the complaint may continue to affect the joint, which at last may become the seat of a white swelling. We must then believe that the virus, when it exists in the female, acting on a larger surface, does not shift about as readily as in the case of the male, and that it finds all the elements to terminate favourably without metastasis.”—(*Gazette Médicale de Paris*, vol. 1847, p. 576.)

TREATMENT.—In acute blennorrhagia of the vagina it is necessary to employ tepid or warm baths, and the greatest benefit will arise from fomentations or injections of warm water. The application of leeches to the groins will likewise be attended with the greatest benefit, but to insure the full effect, at least twelve or eighteen should be applied. General bleeding is rarely necessary ; and poultices or fomentations with warm flannels, should be persisted in, so as to encourage the oozing of blood. Laxatives, in this stage, are likewise of great benefit, or a brisk purgative, such as jalap, may be given to unload the lower bowel ; aloes and colocynth should, however, not usually be prescribed. The greatest good, however, will be derived from

Injections : and as Dr. Bennet, in his recent work on inflammation of the uterus, has given some most valuable hints on the best mode of employing these useful remedies, I shall quote them in full, agreeing as I do in the value he sets upon them as remedial agents.

“Vaginal injections, properly used, constitute a very valuable

* I can by no means agree with M. Boys de Loury, in this statement, nor in the one in the 8th line from the bottom of page 192, or in the 20th line from bottom of page 193, as may be seen by referring to page 21, under the section *Metastasis*.—W.A.

means of treatment in uterine disease. They may consist of water only, or of water containing in solution some medicinal substance.

"Water alone as an injection to the vagina is very beneficial. Its repeated use washes away the morbid secretions from the inflamed surface, and keeps the entire mucous membrane of the cervix and vagina in a clean and cool state. The vagina being a contractile canal, a kind of longitudinal sphincter, naturally closes on itself in its entire extent; thus embracing the uterine neck, as it were, by its upper portion. As a necessary result of this structural condition, when the neck of the uterus is inflamed, the mucus secreted, unless very abundant,—which it is not in slight affections,—stagnates round the cervix, where it is always found in greater or less quantity on the introduction of the speculum, and where it tends to keep up the irritation. This is, no doubt, one of the reasons why a slight inflammation—which on an exposed surface, or on one that could cleanse itself of the morbid secretion, would run through its phases in the course of a few days—is often perpetuated, and gives rise to ulceration.

"Cold water not only acts as a wash or lotion, but has a decided therapeutic effect. It is a powerful tonic and astringent, and may be used with great benefit when inflammation has been subdued, in order to give strength to the relaxed mucous membrane. When it is employed with this view, a large quantity, two or three pints, should be injected once or twice in the twenty-four hours, so as to keep up a continued stream for several minutes. The water may be either quite cold, or with the chill taken off, according to the feelings of the patient, the time of the year, and the external temperature. As a general rule, the colder the water the more decidedly are its tonic effects obtained.

"Medicated injections may be either emollient, anodyne, or astringent. The emollient injections I generally employ are, milk-and-water, linseed tea, or the decoction of marsh mallows, used tepid or cold. They frequently have a very soothing effect, and are principally useful when there is a considerable amount of irritation or inflammation about the vulva and vagina, which astringents do not allay, but even increase. The effects of the decoction of poppy-heads are the same, only it has in addition a slight anodyne property. Plain water may be rendered anodyne by the addition of a few minims of laudanum, or of a drachm or two of tincture of hyoscyamus. I seldom, however, resort to the vaginal injections of fluids containing opium, in order to allay uterine pain, as a much more powerful sedative result is obtained by their injection into the rectum.

"Astringent injections are most valuable remedies in the treatment of inflammation of the lower segment of the uterus, and of the vagina and vulva. Those which I principally employ are, sulphate of alumen, sulphate of zinc, acetate of lead, solution of nitrate of silver, decoction of oak bark, and solution of tannin. The first three I generally use in the proportion of a drachm to a pint of water, increasing or diminishing the strength according to circumstances. After many experimental essays, I have arrived at the conclusion that alum is by far the most efficacious of all these agents, with the exception of nitrate of silver; and as it is the cheapest and most easily met with,

I now most frequently employ it in public practice. It is very rarely indeed that inflammation of the mucous membrane of the vagina, even when of a blennorrhagic nature, resists its use, continued during two or three weeks, provided the injections be properly employed. I do not often employ the solution of nitrate of silver, owing to its having to be injected with a glass syringe, which cannot be done without some risk of the latter breaking, and injuring the patient, and to its discolouring and destroying the linen which it touches. It is a very safe and energetic therapeutic agent; but as the same result can be obtained by alum and the other astringents which I have mentioned, I reserve it for exceptional cases. As a topical application to the vulva in various gradations of strength, when the seat of inflammation and of the irritation which so often accompanies it, the solution of nitrate of silver is invaluable.

"Injections, although of such great importance as a means of cleansing the vagina from all morbid secretions, of diminishing uterine irritation, and of removing vaginal and vulvar inflammation, are generally powerless to subdue confirmed inflammation of the substance of the cervix, or of the mucous membrane by which its cavity is lined. Their inefficiency in inflammation of the cervical cavity is no doubt owing to the fluid not reaching the region affected; in inflammation of the substance of the cervix, a remedy which is only applied to the surface can scarcely be expected to subdue deep-seated disease.

"Not only is it *possible* to treat successfully non-ulcerated inflammation of the cervix, when slight, and of recent date, merely by emollient and astringent injections, rest, and attention to general health, without having recourse to instrumental examination, or to means of treatment requiring instrumental interference, but even slight ulcerations, unaccompanied by general inflammatory hypertrophy, will sometimes give way under the influence of these means. In order to establish this fact, after ascertaining with the speculum the presence of a superficial ulceration, I have treated patients as described, without using any other local treatment to the ulcerated surface, and have found the inflammation diminish, and the ulceration decrease, and at last cicatrize.

"It is only, however, in cases of very slight ulceration, unaccompanied by general hypertrophy, that emollient and astringent injections succeed; and even in these exceptional cases the treatment cannot be depended upon. Even if successful, the recovery is so much more tedious than when cauterization of the ulcerated surface is resorted to, that I never feel authorized to recommend its adoption.

"Although, therefore, it is not impossible to cure the slighter forms of inflammation and ulceration of the uterine neck by vaginal injections, by rest, and by general medication, without the use of the speculum, it is very desirable that the attempt should not be made, if the scruples of the patient can possibly be overcome. We must also bear in mind that however careful and minute the examination made with the finger may be, it can only enable us to form a *surmise* as to the precise nature and extent of the disease; and that, conse-

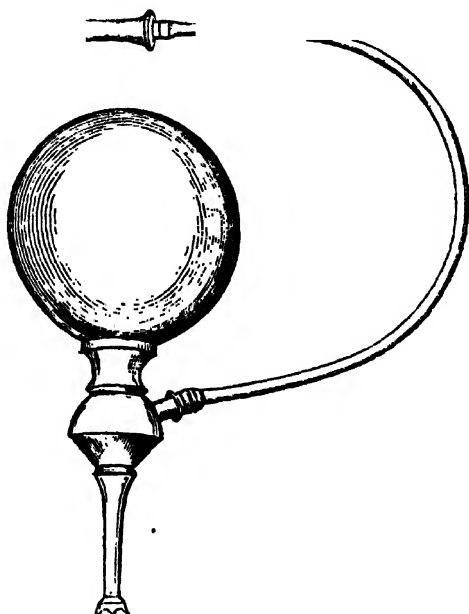
quently, when symptoms indicating disease are present, unless we bring the speculum to our assistance, we must treat our patient, in a great measure, in the dark. Moreover, when once the speculum has been employed for the purpose of diagnosis, its further use, as a means of treatment, is not likely to meet with any obstacle on the part of the patient, and still less on that of her friends.

"In order to obtain the full benefit derivable from vaginal injections, they should be properly and efficiently used ; and this is never the case unless the patient be previously instructed how to proceed. When a fluid is injected into the vagina, the patient being in a stooping position, not only does it at once escape from the passage but it rarely reaches the cervix, or the upper part of the vagina. For this to be insured, she should lie horizontally on her back, on the bed, the sofa, or the floor, with the pelvis slightly elevated, so that the fluid may gravitate towards the internal structures. The natural contractility of the vagina expels the water, it is true, but not until it has well washed the entire surface. A small quantity of the injection often remains imprisoned, as it were, in the superior cul de sac of the vagina in the vicinity of the cervix, until the patient rises, when its own weight brings it away. To prevent the fluid, as it escapes, from moistening the dress of the patient, I generally advise a flat bedpan to be placed under the pelvis. It is by far the most effectual plan, although the female's own ingenuity will often find a substitute.

"This mode of using vaginal injections almost necessarily requires the assistance of a second person, which forms the great objection. If the difficulty cannot be overcome, and the patient cannot manage the injection herself, it must be used in any position which is found practicable. The therapeutic effects will not be so decided, but still a great amount of local benefit will be obtained.

"The best instrument for vaginal injections is a pump syringe, with a six-inch elastic vaginal tube, adapted to the longer tube, and presenting at its extremity four or six small holes, on the sides as well as at the end. The vaginal tube can, after introduction, be directed to the region of the vagina where the cervix lies, and *any* quantity of fluid can be injected without its being withdrawn. I seldom use less than a pint when the injection is a medicated one ; and when it is merely water, I generally advise the patient to keep injecting for several minutes, irrespective of quantity. The ivory and metal syringes in general use are ridiculously small, and contain so little, that the effect produced on a large surface like the vagina must be insignificant, unless they are withdrawn and reintroduced many times. This, however, cannot be done without occasioning great external pain and irritation ; moreover, these syringes have not the power to carry the fluid into the upper part of the vagina. It is entirely owing to the use of these inefficient syringes, and to no precaution being taken to insure the injection reaching the parts affected, that they have fallen into discredit with some practitioners, who assert that vaginal injections are of little use in the treatment of uterine inflammation. With the poorer class of patients who cannot afford the expense of the pump syringe, I employ a large-sized four-ounce

metal syringe, with a long curved extremity, similar to the one known by instrument makers as Clarke's syringe.*



VULCANIZED INDIA-RUBBER
SYPHON SYRINGE.

* I quite coincide with all the opinions here advanced by my friend Dr. Bennet, on the advantages of the pump syringe, as far as they apply to syringes up to the year 1857, when his last edition was published. Since that period the vulcanized india-rubber Syphon Syringe, which acts most efficiently, and which the female can use by herself with the greatest ease, has almost superseded the pump syringe. Its expense, from 17s. 6d. to 1l. 1s., however, precludes its general use; and for some time past I have been recommending instrument-makers to manufacture an improved perfect female syringe at a moderate price. At present these improved instruments may be procured from most chemists and instrument-makers, at a cost of from six to seven shillings. They will be found to answer all the practical purposes of the more expensive article. I had hoped that the price might have been even lower, but after consulting with the more respectable manufacturers, I learn that an efficient instrument with secure valves and joints cannot (at least at present, 1860) be produced for retail sale at a less cost; and only at this price provided the demand should become very large. I make these observations, as it is the interest of patients of moderate means to provide themselves with an efficient instrument, and the wish of the manufacturer that the profession should decide upon the best form of instrument, so that he may manufacture them in large quantities, and at the lowest possible cost.

We are indebted to Dr. Kennedy, of Dublin, for the original idea of this syphon syringe. Improvements have, however, taken place on the original design, and the instruments have now been brought to a state of perfection and cheapness that must render them preferable to all others. I give a woodcut of the instrument, which is so simple in construction that it cannot get out of order, and being made of vulcanized india-rubber, will not break. All brass and ornamental parts are omitted for cheapness' sake. It should be seen, however, that the india-rubber tubing is well secured where it joins the metal; this is a fair test of a well-made instrument.

Printed directions ought to be given away with the instrument to some such effect as this:—*Let the lotion be placed, to the amount of at least half a-pint or more, in the bidet, and then let the patient, sitting over it, introduce the long extremity of the*

“As injections are inefficient unless they reach the entire extent of the vaginal cavity, it is very important to ascertain whether such is the case, especially if their employment does not appear to be attended with the usual benefit. This can easily be ascertained by telling the patient to use an astringent injection—the aluminous one is the best for this purpose—an hour or two before the time of examination. Unless the vaginal secretion be most profuse, all that part of the vaginal cavity which the injection has reached will be found contracted so as to admit with difficulty the introduction of the finger. If, however, it has only washed the lower part of the vagina, the finger, after passing the contracted region, finds the upper part moist and uncontracted.

“I seldom recommend vaginal injections to be used oftener than twice in the twenty-four hours, except in blennorrhagic inflammation; and generally find, that in the course of one, two, or three weeks, the vaginal inflammation is so modified that it is no longer necessary to employ them more than once in that period. When injections are employed to assist in subduing inflammation of the cervix, they may be continued twice a day, along with other more powerful and more efficacious means. In some cases, however, the injection is merely an adjuvant to the treatment, carrying away all morbid secretions, preventing congestion and inflammation from again extending to the vagina, and assisting the action of the remedies directed against the disease of the cervix.”—(“Bennet on Ulceration of the Uterus,” p. 254, 3rd edition.)

In addition, however, to the use of injections employed as above directed, the greatest benefit is to be derived from strong solutions of nitrate of silver; patients, however, seldom can employ them properly, and the manner in which they stain the linen is the great drawback to their use. It is under such circumstances that I now almost always have recourse to touching the walls of the vagina slightly with the solid stick of nitrate of silver, so as merely to whiten the surface. To do this the speculum must be introduced, warm water injections having been previously used to thoroughly remove the discharge, and the walls of the vagina should be further mopped out with dry lint. As the surgeon withdraws the speculum the parts should be slightly cauterized, and pellets of cotton wool, to which little pieces of thread should be attached, may be introduced, and then the lower parts of the vagina should be treated in the same way. The cotton has the additional advantage of soaking up the secretion and separating the folds of mucous membrane. After the cauterization has been performed, the cotton may be left twelve or eighteen

instrument into the vagina as far as it will reach, place the stem of the syringe in the bidet, and compress the syphon repeatedly with the hollow of the right hand or with the thumb and fingers. The injection should be used for some minutes, and afterwards a little clean water should be passed through the tube, which should then be put away in its waterproof bag. Care should be taken that there be no small seeds in the lotion, as these would interfere with the action of the valves. Hot, or even warm water, will, it should be remembered, soon destroy the elasticity of the india-rubber.

hours, when it may be removed by means of the threads, and astringent or warm-water injections may be again had recourse to, taking the precaution of passing the carded cotton as high up the vagina as possible. The cauterization may be repeated every other, or every second day, according to circumstances.

The general health must be attended to, but this will be more fully alluded to in the subsequent section, when the appropriate treatment of affections of the uterus will be spoken of. In vaginal inflammation, I have never seen cubeba or copaiba of the slightest good ; the principal dependence must be placed on local treatment.

RAPE.

In the former editions of this book the subject of rape was only incidentally mentioned ; I think it well in this one to consider the question at greater length.

The subject may be well introduced by the details of a case sent for my opinion by the authorities, which will serve to show the difficulty and doubt that surround questions of this kind. The following was the report furnished by the military medical man under whose care the case was :—

“ ——— Barracks, Jan., 185—.

“ On Wednesday, the ——— of January, I was requested to see the child of ———. On reaching his quarters, I found both him and his wife in evident mental distress. The husband left the room, and Mrs. ———, placing the little girl on the couch, raised her clothes, and gently separating the labia, displayed the vulva, from which there flowed a purulent discharge, in every respect resembling that of gonorrhœa.

“ The entire mucous membranes presented a distinct, but *not* intense inflammatory blush, with patches here and there of a brighter colour than the rest. Defecation and micturition were said to cause intense pain. Even a gentle examination with oiled fingers caused her to cry. But there were no traces of recent violence either on the parts, or on the surface of the abdomen or thighs.

“ In reply to my own inquiries, the little girl persisted in the denial she had all along given to her mother, that any one had offered violence of any kind to her person. And with the view of soothing the mother's distress, I assured her that, though not very common, such discharges did occasionally occur spontaneously in young girls. She was incredulous, and asked me if the parts exhibited a natural appearance. I was compelled to confess that there seemed a development of the external sexual organs greater than is usually observed in girls of such an age. But I suggested that this might arise from her having acquired a habit of putting her finger to the parts—a habit which I assured her was not uncommon amongst children afflicted with worms. She told me that her child had not been troubled with worms, but that *she had for the last three or four weeks often caught her rubbing the*

genitals, and that for the same period she had noticed her gradually falling off in health, in flesh, and in mirthfulness. These facts have a very important bearing on the circumstances hereafter to be detailed.

"I asked her at what time she had first noticed the discharge. Her answer (I think) was only *a day or two* prior to my visit. I told her that had the disease been communicated to the child by male contact, the discharge would have appeared in *eight or fourteen days at most*; and that *this* afforded a reason for her adopting the more consolatory hypothesis of the disease being spontaneous, and for assuming that there was a close connexion between the child's gradually failing health, her fingering of the parts, and the discharge. Seeing that my assurances did little to remove her anxiety, I told her that, so far as I could examine without the infliction of unnecessary pain, I was of opinion that if the child *had* been violated, it could only have been to the extent of having had the parts forcibly *rubbed* with the male organ.

"As there was no one on whom their suspicions rested, I urged them to keep the matter secret (for incidents of this kind are apt, if once made known, to be traditionally handed down from one set of barrack residents to another, receiving exaggerated accessions at each recital); and thus painful embarrassments might be occasioned to their daughter when she came to a more mature age. But I recommended them to watch her carefully, and to notice if any of the men appeared to take a particular interest in her, or to shrink from meeting themselves.

"Fomentations, tepid injections very gently introduced, occasional hip-baths, a zinc lotion (2 grs. to the ounce of water), rest, low diet, and saline medicines, were ordered.

"On Sunday, Mrs. — informed me that she had, through the revelations of a younger child, discovered her daughter's violator. The evidence I need not here detail. But there is distinct proof that *if* he did violate her, the offence must have been committed prior to the —*st* December. And this date harmonizes singularly with the statement of Mrs. — (which at the time I pointed out to her as *opposed* to the supposition of violation), that for three or four weeks her child had been falling off, and that for the same period she had noticed her rubbing and fingering her genitals.

"I still recommended them to observe silence on the subject, until I had consulted with the officer in command. I did so yesterday; and his opinion tallied with my own, that the case was one on which an unscrupulous barrister could deter a jury from giving a conviction, and that the pain which publicity must give to the parents would be greatly enhanced by an acquittal of the culprit.

"The parents, however, wish to have the scoundrel brought to trial. And the colonel gave them a note to the 'magistrate's solicitor,' at ——. But before this note is presented, I have requested them to solicit your advice.

"If the case must be prosecuted, I should be grieved that it broke down from defective medical testimony. I have only once in my life

had a similar case, and that was in the person of a Hindoo girl, of riper age. And I could not give the full and confident medico-legal testimony that is desirable on the present case. The actual and comparative condition of the organs; the extent to which coitus may have been carried, the origin of the discharge, whether the result of simple inflammation or of gonorrhœal inoculation; the lengthened period of incubation of the disease, if gonorrhœal; the prognosis, &c., are the principal points on which I would fain have your opinion. But there are, doubtless, many other points which will engage your attention.

"Deeming it of the utmost importance not to allow the suspected criminal to know that an investigation is in hand, till he is fairly arrested, I have taken no steps to inquire whether he laboured under gonorrhœa about the time of the offence. He was not in hospital, but that does not prove anything; gin and gunpowder are the soldiers' balsam, and we may be able to ascertain from the testimony of comrades whether he 'doctored himself.' The manner in which the crime is said to have been perpetrated, would seem to indicate that he was prompted to its commission less by lewdness than by his belief in the popular superstition (the Eastern Hakeems accept it as a fact as indubitable as the effects of malaria or lunar influence in the development of fever), that connexion with a healthy virgin removes the active inflammatory symptoms of gonorrhœa.

"— M.D."

I examined the little girl, and formed the opinion that the child had not been violated, but that the case was one of vaginal discharge, arising quite independently of impure connexion; accordingly I strongly urged that no steps should be taken to make the case public.

Five years later I wrote to inquire if any, and what steps had been taken about the prosecution of the man, and I received the following answer :—

"DEAR SIR,—The child you inquired about is now a girl of nine years old, living here with her parents, in good health and flesh; and none the worse for her early adventure. I am told the man was not prosecuted, the affair was allowed to drop by the parents, and nothing is known of the fellow. As to the 'satisfaction' of the parents with the result, that I cannot ascertain, nor can it be worth inquiring into."

"Surgeons," says M. Boys de Loury, "are often called upon to examine young girls attacked with vaginitis, and whom it might be supposed had been violated. They are children of from six to seven years of age, generally of lymphatic or scrofulous constitutions, ill-fed, badly clothed, contracting at a very early age the worst habits, which the cynism of their language reveals. Of the large number of little girls that we have been called on to examine, as having been the supposed victims of attempts on their virginity, we have found *very few* who have been so really treated. We could scarcely have supposed that speculation would have laid hold of this means of extorting money among the lower classes, and that mothers had taught their children of ten years of age to play the part of victims, which they support before magistrates,

had we not been often witnesses of the fact. In children, whom we have been often called upon by magistrates to examine, we have always found the hymen perfect, and the vaginal orifice by no means dilated ; but these parts were manifestly red and inflamed ; sometimes excoriations were present. We have always satisfied ourselves upon the existence of green muco-pus, very abundant and thick, escaping out of the vagina, and which excoriates not only the vulva but the surrounding parts, even as high as the fold of the thigh ; and all these parts may become the seat of more or less considerable swelling. Lastly, let us state that in a small proportion of the children who have really been the subjects of criminal acts of violence, we have found disorders of the external genital organs, but the abundance of the pus flowing out of the vagina was less than in cases of children attacked with vaginitis which we could call scrofulous, and the cure of which is very difficult.

"We have found, in cases of young children who have been many times the subjects of attempts against their modesty, a depression of the perinæum, so as to cause it to retract towards the posterior part of the vagina. We can likewise extend the same observation to young prostitutes, who have given themselves up to an early career of profligacy, and in whom this characteristic has been sufficiently preserved, so as to allow of recognition of the original cause."

The profession is becoming every day more convinced that there are many of the affections of the female genito-urinary organs which resemble venereal blennorrhagia, but depend upon a complaint which has nothing to do with contagion. Dr. Cormack some years ago called the attention of the profession to cases of vaginitis depending upon scarlatina. His experience on the subject is so interesting that I shall quote his own words :—

"In the epidemic of 1848-49 I had under my charge twenty-three female patients, all of whom were cleanly, well nursed, and in a respectable social position. In twelve of the whole number there was well-marked vaginitis ; and so impressed was I with the importance of averting or preventing this affection, that, in every female patient, I directed, from the very first, careful ablutions of the parts to be performed at least twice in twenty-four hours. Of the twenty-three female patients, two only were above fourteen years, and these were respectively twenty-six and twenty-eight, and both married. Now both of these patients had *acute* vaginitis, much more severe than any of the children. In one lady, for forty-eight hours, the discharge was so abundant as to require the nurse to change the towels at least every hour ; and it was of so acrid a nature as to excoriate the thighs and anus, notwithstanding every precaution being taken to protect these parts. The other had it more mildly ; but the vaginitis was also in her a source of great suffering and discomfort. The first lady aborted ; the second was not in the family way. The first was the most dreadful case of scarlatina which I had ever seen issue in perfect recovery ; the second was one of moderate severity.

"Speaking, as I now do, from a very limited number of facts, I have no right to give an absolute opinion as to the frequency or rarity of scarlatinal vaginitis ; but I would venture to suggest, that the non-observance of this affection by the practitioner is no proof of its

absence ; for patients suffering from scarlet fever are often too ill to make complaints ; and, in other cases, the affection is managed by the nurse, without her thinking it necessary to trouble the doctor. The question must be decided by future experience of a large number of cases, carefully observed with a special view to its elucidation."—(*London Journal of Medicine*, Sept. 1850, p. 872.)

Dr. Barnes has also related a case highly important in a medico-legal point of view, in which a girl, aged sixteen, suffered from a mucopurulent discharge from the vagina, after the decline of the eruptive stage of scarlatina. He says, "There was evidence to show that this discharge did not exist at the time of the girl's admission, and that it was *first* observed at the period I have mentioned—viz., after the decline of the eruption, when she had been some days in the hospital.

"I believe that the discharge was not blennorrhagic, but a newly-observed feature in the pathology of scarlatina.

"It is in the suspicion of blennorrhagia that lies the interest of this symptom in relation to forensic medicine. In this case, for example, an unmerited stigma might attach to the girl's character, were it not admitted that the discharge might be the result of scarlatinal vaginitis. Numerous other charges of a grave nature might be founded upon such an appearance. Accusations of rape even might receive corroborative proof from its presence. About two years ago, I saw a child of about eleven years old, who was recovering from scarlatina. It was then observed, for the first time, that she had a discharge from the vagina, and suspicions were immediately excited that she had been abused by a lad in the neighbourhood. This discharge might have been a sequela of scarlatina."—(*Medical Gazette*, July 12, 1850, p. 65.)

Having, then, shown the doubts which exist as to whether a girl has been raped or not, let me call the reader's attention to the opinions of Dr. Tardieu, expressed in his monograph on "*Attentats aux Mœurs*," as to the appearances found among the large number of young girls who, after having been deflowered, have been examined by him at longer or shorter periods after the commission of the crime.

In the annexed Plate I., the natural condition of the organs in the child is seen. The vulva is partly opened at its upper portion so as to show the orifice of the urethra, and closed at its inferior extremity. The reverse of this takes place in the adult. In addition, the opening of the vulva in children is direct and not oblique from above downwards.

The parts that undergo the greatest changes in consequence of malpractices are the labia minora. This may be carried to such an extent that they may extend beyond the labia majora. An enlarged clitoris may usually be considered as a fair presumption of vicious habits. We should always look with suspicion on a greater or less amount of turgescence of the organs, or the mobility or laxity of the clitoris as well as of the prepuce which covers it. As regards the *hymen* the greatest diversity exists, as is shown in the drawings. It is a mistake to suppose that it is often absent. In very young children it is deeply-seated, and the thighs and labia must be widely separated to bring the membrane into view.

The first form of the hymen is labial, and this (as seen in Plate I. Fig. 1.) is often retained till after puberty.

Fig. 2. In this, a very common type, the hymen forms a diaphragm irregularly circular, interrupted towards its superior third, by an opening more or less large. (See Plate I. Fig. 2.)

Fig. 3. This consists in a regular and exactly circular diaphragm, with a central orifice. (See Plate I. Fig. 3.)

Fig. 4. Here we find the hymen assuming somewhat of a semilunar shape, in the form of a crescent, the upper border more or less hollowed, the extremities losing themselves in the labia minora. (See Plate I. Fig. 4.)

Fig. 5. Lastly, the hymen constitutes sometimes, at the entrance of the vagina, a simple circular or semilunar band, reduced to a sort of fold or fringe behind the labia minora, the height of which varies in young girls from the 12th of an inch to a 3rd in adults. (See Plate I. Fig. 5.)

I have seen this form resemble a simple turn or circular hem around the vagina, and it is this disposition which may induce persons to believe that the hymen is absent.

The Carunculae myrtiformes are but the irregular remains of the torn hymen, and as such are important indices in medical jurisprudence.

The Vagina varies, but in the mere child will only admit a quill; towards puberty the little finger may be passed; in the adult female the point of the index finger may be introduced, but with some difficulty. It is important to note these facts, as a larger opening may throw light upon the nature of the case.

No objection is usually made to an examination; indeed a refusal is a circumstance worthy of note, if not of suspicion. I need hardly point out the propriety of the presence of a female—if possible the mother.

In the examination, we have to note whether there is any appearance of *any attempt at all* having been made; if there is, whether it appears to have been successful or not, and whether it was attended with violence or not.

From two to ten years of age the female passage is too slightly developed to admit of intromission of the male organ, and, consequently, the only result of an attempt on a girl of this age is the injury caused by friction or pressure against the vulva.

It is well to note if the attempts are *recent* or not, *isolated* or *repeated*. *Negative* signs should be remarked on, as well as *positive*.

In children under eleven years of age, the inflammation is generally somewhat acute. The labia, both majora and minora, are swollen and contused; their internal surface, as well as the hymen and the entrance to the vagina are of a violent red colour; and minute examination of the parts is painful, or even unbearable. Excoriations may be met with in these situations, as well as ulcers; ecchymosis may be present in consequence of the violence used, but the most important sign is purulent discharge of a yellowish green colour, sufficiently abundant to moisten the external parts, and soil the linen, and tenacious enough to glue the lips together in drying. The rapidity with which these symptoms come on is remarkable, a few hours being sufficient to

bring them to their height. Sometimes, however, this does not occur for days ; there are pricking, heat, and pain, which cause the child to rub the parts, and it is from this, and by the stains on the linen that the mother's attention is generally first called to the girl's condition.

These symptoms are no proof whatever that the man who has committed the offence is diseased. On the contrary, it is quite certain that a perfectly healthy man may cause every one of them. Should, however, the *urethra* of the child be found affected, it would be a fair inference that the man was suffering from gonorrhœa.

The premature development of the sexual organs of some children, as well as their precocity, is very remarkable, and should never be lost sight of in these inquiries. If the labia majora are thickened, and separated at the inferior border ; the vulva largely open ; the labia minora so long as to protrude beyond the majora, as if they had been drawn down ; if the clitoris is augmented in size, red, and capable of becoming erect and exposed—these are almost infallible indications of corrupted habits, and may seriously affect the nature of our decision in a case of alleged rape.

When attempts have been repeatedly made on a child, we find that the membrane forming the hymen and all the parts making up the vulva have been pushed back, and a larger or smaller infundibuliform sac is formed, often capable of receiving the extremity of the penis, and analogous to that which is now considered characteristic of the commission of other unnatural crimes. The hymen, in these cases, is thin and atrophied in consequence of repeated pressure upon it. In girls of more than ten, (some think even from six,) the capital offence consists in destruction of the hymen. This, as we have seen, (p. 205) may vary much in situation and form. The rupture generally takes place from a sudden effort made in the direction of the axis of the vagina, and is directed towards the centre and the free edge of the membrane, which is, of course, the point where the least resistance is offered. The rent generally takes place from above downwards, and from the centre of the membrane, so as to leave on each side a vertical flap. (See Plate II. Fig. 1.) More rarely the division occurs at two places, and leaves between the two lateral fragments a median triangular flap. (Plate II. Fig. 2.)

A third form of rent is that in which the hymen is separated into four flaps more or less regular. (Plate II. Fig. 4.)

In recent cases the rent presents all the characters of a contused wound with red and bloody edges. The attendant inflammation—which is soon set up—causes a marked swelling, and sometimes suppuration may ensue, which may interrupt and retard healing. Cicatrization may not take place for fifteen or even twenty days, and will depend upon the excitement the parts have undergone, as well as the amount of inflammation. During the first days following the capital offence, the orifice of the vagina is open, allowing a slightly viscous colourless discharge to ooze out, which is evidence of the commencement of irritation of the vaginal mucous membrane.

Lastly, it is very necessary carefully to examine the child's linen, to see if any traces exist of blood, menstrual or otherwise, and to

note if traces of semen can be discovered. These should be examined under the microscope. To aid such an investigation I have given in the annexed plate a representation of the peculiar characteristics we have to look for. If any of these are discovered the case is complete, and the medical witness need not fear to enter the witness box.

SECTION IV.

BLENNORRHAGIA OF THE UTERUS.

ACUTE inflammation of the uterus may extend from the vagina and affect the *Os tincæ*. It will, however, be unnecessary here to allude further to superficial inflammation, as the complaint is but an extension of the inflammation of the vagina, and, as such, is attended with the same symptoms and should be treated in the same way as is mentioned in the last section. But inflammation of the uterus is by no means an invariable consequence of the disease in the vagina; in many cases it commences at and is confined to the *os uteri*, or beginning, at the *os*, may implicate the vagina.

NORMAL APPEARANCE OF THE OS UTERI.—In healthy women, who have not had children, the introduction of the speculum brings into view the *os uteri*, which is situated about four inches from the vulva. It presents a pointed, conical, nipple-like extremity, as large as the point of the ring-finger, and at once comes into view between the blades of the speculum. In the centre of this nipple-shaped extremity we observe the orifice leading to the canal in the interior of the *os*. This should be small, and not patulous, lined with a mucous membrane paler than that of the inside of the lips; highly polished when wiped, as there is always some natural secretion on its surface, and the mucous membrane appears strongly stretched over the fibrous, hard structure of the organ. There is no puckering of the edges of the aperture, no puffiness of the lips, although in *primiparæ* and in disease, we speak of the two lips of the *os*. If the mucous membrane is traced back, it is seen covering the base of the cone of this nipple-shaped projection, and the base may be as large as that portion of the thumb which joins the hand. The length of the *os* thus seen in the vagina may be half an inch or even one inch, and the colour of the mucous membrane will not be quite so pale as that seen on the *os*. The direction of the *os uteri* will be various when presenting itself between the blades of the speculum. (See Plate II. Fig. 1.)

In healthy women who have had children or miscarried, the *os uteri* presents a very different appearance; generally speaking, its position is lower in the vagina. Instead of the conical nipple-shaped projection of a virgin uterus, we have a shorter and thicker *os*; in fact, there may be scarcely any *os tincæ* at all; the opening is an irregular chink, and the margin is more or less irregular, presenting two lips which are often puckered; the opening may be patulous, and the colour of the mucous membrane redder, or purplish, instead of the

pale pink seen in virgin uteri. The secretion from the surface is likewise greater, and a clear jelly-like mucus, which is found to be alkaline, is often seen exuding from the aperture. The quantity of secretion differs materially in different women; I had lately occasion to examine a female, in whom not the slightest trace of secretion could be seen, and the vagina was unnaturally dry; in others the reverse is observed; and yet both are consistent with a good state of health, provided the secretion is not of an opaque or whitish colour. It is very necessary for the young surgeon to be aware of these different healthy conditions of the mucous membrane, otherwise he will be unable to detect the unhealthy appearances too often found in examinations. I have more than once seen a healthy os uteri condemned, because the manipulator was unaware of what the natural condition of an organ so far removed from the eye ought to be.

PATHOLOGY.—Instrumental examination now enables us to show the changes which take place in consequence of blennorrhagia of the os uteri. The whole surface of the os becomes of a dull brick-red colour, similar to that which occurs in balanitis on the glans penis, the aperture in the os tincæ is observed swollen, and the lips œdematous, the submucous cellular tissue is infiltrated, and you have puffiness and swelling of the whole. When the inflammation has existed some time, you notice the granular condition seen in Plate III. Fig. 2; or you may have the excoriated appearance seen in Plate III. Fig. 1. In the more chronic forms we find ulcers of all sizes, varying from that of a horse-bean to that of a five-shilling piece. (See Plate IV.) In some instances these are merely erosions, in others excavated ulcers are met with; but as a general rule, ulcers on the os uteri are superficial. Their surface is usually covered with a thick secretion, which is very tenacious, and must be wiped off before we can bring into view the ulcer; beneath this secretion we may observe a granular condition, such as might lead a medical man to believe that cicatrization was about to take place; but if the case is watched, no such result will follow. In other instances the surface is covered with a white chamois leather-looking secretion which cannot be removed; in some cases we see unhealthy granulations which bleed under the slightest touch. The ulcers may occupy any portion of the os uteri, but the posterior lip is the part most frequently attacked; in many cases both lips are covered with ulceration, which is observed creeping up into the uterus through the os tincæ.* The shape of such ulcers is very irregular, but they are more or less round, and the line of demarcation between the morbid structures and the healthy mucous membrane is very striking.

The cervix itself may be hypertrophied or indurated, and there may be retroversion or anteversion of its fundus; but these are changes

* These lesions are now generally admitted to exist, as is proved by the concurrent testimony of Dr. Locock, Professor Murphy, Dr. Oldham, and Dr. Bennet in London, Mr. Whitehead of Liverpool, Drs. Kennedy and Churchill in Dublin, and Dr. Simpson in Edinburgh. Doubtless in a few years the younger members of our profession will be astonished at learning that these lesions which are now found to be so common, in consequence of the more general employment of the speculum, should have been so long ignored.

not coming directly under this section, and I must refer my readers to Dr. Bennet's valuable treatise for further information.

Now that these lesions have been discovered, acknowledged, and treated, differences of opinion have arisen as to their nature among those who have written on the subject. At first they were attributed to contagion, to syphilis, to venereal diseases, and we now often find these ulcerations stated to be syphilitic. I need not say that the description I have given of these ulcers in the preceding pages, distinctly contradicts such assertions. On the contrary, I wish explicitly to lay it down that they depend upon inflammation, in many cases brought on by the same causes that produce ulceration elsewhere ; in many instances, contagion, as in blennorrhagia, will produce inflammation, and that again will cause the lesions ; in other cases it is abortion, or the many causes which have been specified in page 7, as the causes of blennorrhagia.

These lesions depend upon inflammation, and consist of simple ulcers, the result of acute or chronic inflammation of surfaces which readily take on the ulcerative processes, and in which there is but little tendency to heal. Many English writers, having at length met with the diseases (which I described nineteen years ago in the first edition of this work) in women of the town, have come to the conclusion, that as these unfortunate creatures often suffer from syphilis, the ulcers met with on the uterus have that origin. Now there cannot be a greater error, or one which leads to more mischief, as we shall prove when we come to speak of treatment. During the time I was attached to the Female Venereal Hospital in Paris, a great number of prostitutes, examined daily with the speculum, came under my care. A large majority of those suffering under ulceration of the uterus had never suffered from syphilis, and at the time of their examination presented no traces of lues venerea ; in women who suffer from syphilis in its worst forms in all other parts of the body, the os uteri is very seldom affected, and when affected it appears to be a coincidence, just as a patient with a varicose state of the legs or eczema of the skin, may be attacked with syphilis ; but these ulcers on the uterus are perfectly independent of syphilis in ninety-nine out of every hundred cases.

Not content with these observations, I have inoculated the patients themselves with the matter coming from these sores, and the result has been, that the inoculated part healed as readily as any other cut. I have even applied a little blister to the skin, and when it had well risen, I have placed lint, soaked in the secretion, on the ulcer, and kept it for some time in contact with the blistered surface, which likewise healed without any difficulty. True syphilitic ulcers in the vagina and on the os uteri are very uncommon. I have never met with more than three or four that I could attribute to contagion of the syphilitic poison. As we shall hereafter see, syphilitic ulcers are generally situated at or about the external organs of generation in the female, the virus is then deposited on surfaces, which in connexion may become abraded, and sores occur abundantly ; but, in the vagina, or on the os uteri, the circumstances favouring contagion do not often occur, for if the contagious pus of chancre reaches as far,

it is generally deposited on a layer of mucus, which protects the membrane beneath; and as the vagina yields readily to dilatation, no abrasion of its surface takes place; excoriations then can rarely occur there, and in practice they are seldom met with. I again repeat that ulcerations on the neck of the uterus are in ninety-nine times out of a hundred merely simple affections, the result of acute or chronic inflammation, very intractable to ordinary treatment, it must be acknowledged, and persisting an almost indefinite time unless we employ local applications. The last, and perhaps the most conclusive evidence, however, in the opinion of many, that these ulcers are not syphilitic arises from the fact, that they are met with in virgins, and in women who are beyond suspicion, in married persons perfectly free from any trace of syphilis in themselves or their husbands, and yet the ulcers in no respect differ from the majority of those met with on the uterus of prostitutes. The causes may be different, but the results are the same, and those who would attempt to point out the distinction from the observations of a few supposed symptoms, will but lead the reader into error, and retard the progress of our knowledge of uterine affections.

True syphilitic ulcers are of such rare occurrence amidst the vast mass of simple ulcerations met with on the os uteri, that they need not be looked for except on rare occasions. In the instances in which I have seen them, they differ from all other ulcers; they are small, covered with a chamois leather secretion, which it is difficult to remove; their edges are distinct, they look as if a portion of mucous membrane had been punched out of the os uteri, and inoculation has shown that they were true chancres, situated on this unusual position. I have occasionally, likewise, seen ulcers on the vagina, which I have had reason to believe were syphilitic, but the occurrence is so rare, that although in all doubtful cases they may be suspected, still they will be rarely found, and their existence there must be attributed rather to the secretions left in the vagina, or on sores about the external organs.

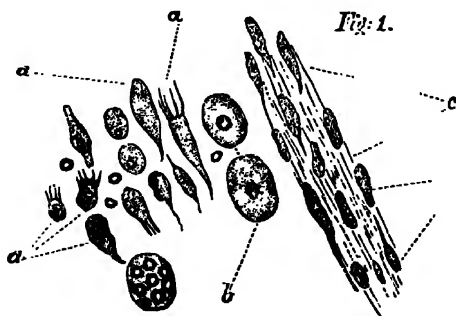
The necessity of making the above observations is the more apparent, as a modern writer on the uterus, Mr. Whitehead, has classed these affections, often met with in poor married women, as syphilitic constitutional symptoms. That gentleman at page 372 says, "The local pathognomonic signs, to enumerate them in the order of their frequency, are,—I. *Endo-cervicitis*, or inflammation to a greater or less extent of the lining membrane of the cervix uteri, with inflammation, excoriation, or ulceration of the labia around the uterine orifice (this appearance was noticed in nineteen out of twenty-eight cases.) Mr. Whitehead also considers a mottled and patchy appearance of the cervix, aphthæ, and warts, as evidence of syphilis, and he gives several cases in which these appearances were coupled with constitutional symptoms of syphilis. Now, in my opinion, after the careful perusal of these cases, there was no relation of cause and effect between syphilis and these appearances; their coexistence is not surprising, when we read that these poor creatures had been for years labouring under chronic discharges from the vagina. At the Islington Dispensary, I could at any time have shown Mr. Whitehead numbers of poor women whose history is similar to that detailed in his pages; some have had syphilis, it is true, but many never have.

In both, I could have shown him ulcerations, aphthæ, and vegetations, but these are not symptoms of syphilis. If syphilis exists, constitutional symptoms are complicated with chronic affections of the uterus, a complaint unfortunately too common among the lower classes of our town population, and which get well by local means, without any recourse being had to mercury—a remedy not to be sanctioned, as I shall presently show in the treatment of these diseases.

THE DISCHARGES FROM THE OS UTERI.—I cannot conclude this part of the subject, without adding a few words on the nature of the morbid discharges, which are very peculiar when they come from the os uteri. The first object which strikes the eye, when introducing the speculum, is a large mass of opaque tenacious elastic stringy mucus, blocking up the aperture of the os tincæ, and hanging down into the vagina. There may be more or less numerous globules of pus mixed with this mass as is well seen in Plate II. Fig. 2. But this is by no means necessary, as shown in the following woodcut. If by the aid of a long pair of forceps, this tenacious mucus is seized and brought carefully away, it will be found to have been firmly adherent to the os uteri, or rather to have been attached to the follicles within the os, and out of which it is drawn with difficulty by the forceps; it resembles to the naked eye, that firm tenacious secretion which passes from the nostrils, when a cold is getting better.

Anxious to study its microscopical character, I obtained a good specimen from (Mrs. L.,) a patient then under my care, who had infected, with a serous-looking discharge, a young man under whose protection she was living. Dr. J. W. Griffith kindly submitted the specimen to the microscope, and the annexed woodcut is a faithful representation of its microscopical characters.

Dr. Griffith thus further describes the appearances:—"A colourless, tenacious, glairy mass. Contained neither pus-corpuscles nor granule cells. The tenacious matter itself was transparent, and structureless, exhibiting mere scattered granules or points under the



STRINGY MUCUS FROM OS UTERI.

a. Ciliated uterine epithellium; b. Pavement epithellium of vagina; c. Fibrous appearance; d. Younger state of epithellium.

microscope; imbedded in it were numerous epithelial scales, many of them ciliated; the number of cilia varied. The scales were very granular, the nuclei few and faint. A few globules of fat, and the

irregular fibrous appearance so frequently detected in mucus, comprise all the other objects contained in this substance."

When this fibrous, stringy mucus has been removed, the membrane may appear perfectly healthy, or rather paler than usual; and the secretion comes not from the surface of the membrane, but is secreted by the follicles within the os tincae. This species of discharge is in fact an abnormal secretion of the glands of Naboth, which in health perform the part of blocking up the os uteri with the firm plug when impregnation has taken place, and the existence of which during leucorrhœa is one among the many causes of sterility. I have known several women become pregnant immediately this chronic discharge, which for years has been blocking up the orifice, has been cured; its existence has apparently prevented the semen entering the uterus.

It may not be without interest, in a medico-legal point of view, to call attention to the diagnosis between this secretion of the os uteri and that of the vagina or vulva, when the former has fallen on linen, or in cases where an examination with instruments is not permitted. When the secretion coming from within the os uteri dries on linen, it leaves a roundish massive stain, dissimilar to the more or less angular one found on the woman's chemise, when the secretion of the vagina falls upon it. In the former case the spot is as it were starched or firm, the colour is of dirty white or greenish hue, in this respect resembling vaginal discharge, but differing from it in its stiff feel. The microscopic characters of the two form also important aids; the vaginal epithelium being of the pavement kind, whilst the uterine is cylindrical, as shown in the woodcut in the preceding page.

CONTAGION.—If a female labours under blennorrhagia of the uterus in one of the forms above mentioned, it by no means follows that she should communicate the complaint to her husband. Surgeons are often called upon to examine women who for years have suffered under affections of the uterus, without the husband having been contaminated. In such instances, the disease has been gradually coming on in the female, and the urethra in the male appears to accustom itself to the presence of the unhealthy secretions, which must come in contact with it. In these instances connexion may take place rarely, or the disease on the part of the female be but slight. The exposure of the male to contagion is not only a rare occurrence, and lasts but a short time, but a still stronger reason for his escape is the fact that there is little determination of blood to the female organs of generation, in consequence of the absence of venereal orgasm.

Men placed in such circumstances do not however always escape; husbands occasionally complain of slight discharge, or painful micturition, and other mild symptoms of gonorrhœa, which subside on abstaining from connexion, and taking a little alterative medicine. At p. 22, I have given an instance, in which the progress of the case was very different, and resulted in one of the most severe attacks I have ever treated.

In instances such as I have just described, minute inquiry shows, either that contagion took place about the time of menstruation;

that after absence, venereal excesses took place ; that the female had been exerting herself to an unusual degree ; or that the health of the husband had been greatly impaired by some accidental cause ;—in fact, through the occurrence of some such cause, the secretions had been rendered probably more acrid or purulent, or undergone some change which it is impossible in the present day to state certainly, and of which we at present know nothing further, than that it gives the secretion a morbid and contagious property.

Now, supposing a married woman does not communicate any affection to her husband, it by no means follows, that a second party who may have connexion with her, escapes ; many cases have come to my knowledge, in which the lover has been infected, the husband remaining intact ; the explanation *may be*, however, found in the fact, that in the one case there is *empressment*, and frequent contact of the secretion, in the other, intercourse rarely takes place ; besides, as I stated at p. 14, habit, or as the French call it, *acclimatement*, may have some share in the anomaly.

In a former part of this work, I have had occasion to remark, that in the majority of cases in which I have been consulted by men living constantly with women, and contracting discharges from them, contagion does not necessarily take place at once, but about a month or six weeks after cohabitation has been commenced and continued. Instead then of the urethra becoming habituated to the discharge, it might appear here as if the reverse occurred, but observation teaches us, that in most of these cases, the female has been previously a continent person, though long suffering from some obscure uterine symptoms, and constant cohabitation has gradually set up subacute inflammation in an already diseased structure, and the secretions becoming more acrid, have caused the contagion. I have seen this result so often occur, that I entertain no doubt of the fact, that a female may not have been unfaithful to the man she is living with, and yet may produce discharge in him, and I consider the above as the only explanation to be offered of such cases.

SYMPTOMS.—In vaginitis, as noticed above, the symptoms are generally local ; in affections of the os uteri some pain is felt in the situation of the uterus, aggravated by connexion. There may also be much or little discharge of the stringy glairy character alluded to at page 211, as well as pain in the back and loins, shooting down the thighs ; and all these symptoms are much increased on exertion. All the functional diseases of the organ, as amenorrhœa, dysmenorrhœa, &c., may occur, and the general health rarely escapes suffering materially. Thus we have indigestion in its most severe forms ; we have the hollow glassy eye, the drawn features, and many are the cases of invalids treated for general ill health, that only get worse under ordinary remedies, but as readily recover under appropriate treatment of affections of the uterus. I should, however, be too far digressing from my subject did I enter further upon these matters. The surgeon is most frequently called to these cases in consequence of the female who suffers from one of these affections having infected an individual.

TREATMENT.—Before I commence speaking of the treatment of

affections of the uterus, I feel called upon to make a few observations on the speculum, one of the most valuable means we at present possess for the diagnosis and treatment of diseases of the uterus, an instrument which has been already incidentally alluded to in these pages, and a full description of which, together with its history, use, and means of employment, as well as some remarks on its introduction into this country, I have postponed, to be treated of in this section, in order that I might avoid repetition, and include what I have to say on the subject under one appropriate heading.

THE SPECULUM,

Historical Sketch of.—The antiquity of this instrument must be great when we find even mention made of it so early as the days of the Emperor Domitian. The museum at Naples contains a bronze instrument, which in 1818, was dug out of the ruins of Pompeii, proving that in those days practitioners had succeeded in bringing the os uteri into view, and treating it with local and appropriate remedies.*

It was, however, re-invented in 1801 by Recamier of Paris, who was able to treat by means of simple instruments ulcers of the uterus and vagina with topical applications, like those of the throat. These instruments have been successively improved upon, until we arrive at the form which we shall describe a few pages further on. The speculum soon came to be extensively employed in the investigation of venereal diseases in the hospitals of Paris, and to my friend, M. Ricord, the greatest credit is due for having generalized its use for this purpose; society has reaped the greatest benefit from its employment, for without its aid we could not have arrived at that degree of certainty which we at present possess on the subject of venereal disease. Its introduction, even in Paris, in the treatment of prostitutes, was not without its difficulties, and M. Ricord attributes the female revolution which took place at his hospital, not to the dislike of the frail sisterhood to the indelicacy of the proceeding, but because the instrument brought into view lesions that his confrères did not detect, and which required, instead of, as formerly, a few days, a prolonged residence within the hospital. The instrument, in the French capital, is now so commonly employed, that while I had the care of the wards of the Ourcine Hospital I was constantly in the habit of examining forty women in a morning, so readily is the operation done, and so tractable were the patients, when convinced of its absolute necessity.

Soon after the encomiums passed on the instrument by Recamier, the speculum, like many other modern French improvements, was noticed in England; Dr. Balbirnie wrote a book on affections of the uterus, in which the use of the speculum was strongly urged upon the notice of the profession, but the instrument was seldom if ever employed, or even alluded to by authors of that day. Such was the state of things when in 1841 my first edition was published, entitled, "On Venereal Diseases and certain Affections of the Uterus, attended

* Vide Dr. Lee's paper with copy of the instrument, "Med. Chir. Transactions," vol. xxxiii. page 261.

with Discharges," in which the attention of the profession was directed to the subject by a separate atlas of plates displaying these affections as they appeared in the selected cases taken from the patients under my care in the Ourcine Hospital in Paris, and published immediately on my return from France. These diseases and affections, of which little was at that time written or thought, are becoming every day more and more known, particularly since public attention has been especially called to the subject by Dr. Bennet, in his valuable work on "Inflammation of the Uterus."

Nineteen years ago, when these plates first appeared, I was told by many medical men, that the diseases depicted there, *might* exist among the lower classes of French prostitutes, or even among the upper ranks of our neighbours, but that no such diseases could be found in England. So little, apparently, was known about uterine diseases, that when even the heads of the profession saw these plates, they attributed them to contagion, and believed that they could only occur in the impure, thus coinciding with the opinions of Sir Charles Clarke, and like him, recommending injections and tonics.

Formerly when an instrumental examination was suggested, few surgeons would condescend even to reason on the matter, others declined on the plea of not wishing to propose anything which could shock the delicacy of an English female; and the patient hearing these statements, often declined further consultation with a surgeon who was said to propose a plan of treatment not only indelicate, but perfectly unnecessary. Another six months of useless lotion and drugs, unattended with the slightest relief, caused patients, however, to think that prejudice might have something to do with the decrying of this practice. Many ventured the experiment, and found that the instrumental examination was not such a painful process as had been stated, and that it was by no means unnecessary, inasmuch as in a few weeks they found themselves restored to a state of health they had not enjoyed for many years. As the number of cases of this sort increased, it was impossible any longer to meet them with contempt. The late opponents of the speculum now acknowledged to having themselves occasionally employed it, but objected to its indiscriminate use. Their hostility not unfrequently took the form of ridicule, as for instance, in such stories as the following: "A West-End speculum-doctor (as he is called) examined one morning a mother, her eight daughters, and her *cook*! pronounced them all to labour under inflammation, and accordingly cauterized the whole family *secundum artem*."—(*Medical Times*, vol. xx. p. 459.)

Nothing, however, shows more forcibly the strength of the feeling excited against the introduction of the speculum into England, than a discussion at the Royal Medical and Chirurgical Society, following the reading of a paper by Dr. Lee.

The general tenor of Dr. Lee's paper is to show that the employment of the speculum, if it was not completely useless, was at least pernicious, in a diagnostic point of view. And he went so far as to deny the existence of ulceration of the os uteri, the result of simple inflammation, and called in question the good faith of those who had

advanced the opposite doctrine, as may be proved by reference to the paper. He says:—

“Neither in the living nor in the dead body have I ever seen ulceration of the os and cervix uteri, except of a *specific* character, and especially scrofulous and cancerous; but I have met with a very considerable number of cases in which it had been affirmed by others to exist during life, after deliberate and repeated examination by them with the speculum, where I ascertained that ulceration did not exist in the os and cervix uteri, nor disease of any kind.”—(Dr. Lee’s, paper, p. 275, vol. xxxiii. of “Med. Chir. Transactions.”)

Dr. Ashwell boldly stated that these lesions, “independently of cancer, were only to be observed in twenty-five out of one thousand cases.” (See *Lancet* and *Medical Times*, June 8, 1850.)

These assertions, we cannot call them arguments, were peremptorily refuted by the head of the obstetric department, Dr. Looock, who reduced to nothing Dr. Ashwell’s eloquent tirade upon the delicacy of English women, and asserted that these uterine lesions, which render an instrumental examination necessary, were very common. The frequency of these lesions was, moreover, forcibly maintained by Professor Murphy, not to mention Dr. Bennet and myself, who again asserted what we had previously published. I shall not further remark on this discussion, which was continued out of doors, in a number of very curious letters to be found in the *Lancet* of 1850, otherwise than to state that, the speculum is now (1860) generally employed in the diagnosis of uterine disease. So generally indeed, that its original supporters think that it is not unfrequently injudiciously and unnecessarily used by the very persons who were at first most vehement against it.

To return however to more practical matters; having decided that an instrumental examination is necessary, it may be well to say, a few words on the subject of

Preparatory Steps for an Examination.—Let us suppose, then, that in a case of vaginal or uterine affection the employment of the speculum is determined upon, the first step is to obtain the acquiescence of the female. The consulting surgeon in London finds no great difficulty in this: the patient comes to him aware that she has some obscure affection, or is brought by a gentleman who is anxious to ascertain the cause of her complaint; under these circumstances the obstetrician or surgeon does not find the same scruples to overcome that may occur to those in general practice, and it is only necessary for him to state his inability without examination to arrive at a correct knowledge of the cause of the complaint, when acquiescence will be generally accorded. Many females understand an examination to mean one conducted with the finger, and it may be advisable to be at first content with this, which will of course teach the surgeon little more than the position of the os uteri or the existence of an ulcer or granular condition of the neck of the womb, and the patient may then be delicately told that an ulcer exists which it is impossible to reach without an instrument; and if she be a sensible person, and the examination conducted with natural and proper regard to her feelings—seeing the necessity, and having been a long sufferer without benefit

from other means—she will submit with reluctance, which the surgeon may the more readily overcome by telling her that this necessary examination is as disagreeable to his feelings as it can be to hers, but that no other course is left to him or to her if she desire a cure. In a large class of women this preliminary examination with the finger is unnecessary, and I always avoid it if possible, particularly when I suspect contagion, and decidedly state that I cannot give an opinion without an instrumental examination.

It is better for a medical man not to urge it himself. When a patient evinces any disinclination, I at once propose to postpone the examination. The patient then begins to desire and beg for it herself, wishing to have her mind set at rest on the nature of her complaint. This puts the surgeon in the proper, and in some cases, the only safe position for him to occupy. In the cases I am now describing, the presence of a third party is not generally asked; but if it be suggested, I never refuse, and leave the choice to my patients. These are little matters which it may be necessary for the surgeon to be apprised of beforehand, and the observance of which will save him from much odium. When your patient consents, the examination had better be made at once, there is no good in delaying it; and once done, your patient will submit a second time without more ado, particularly when made acquainted with the nature of her complaint.

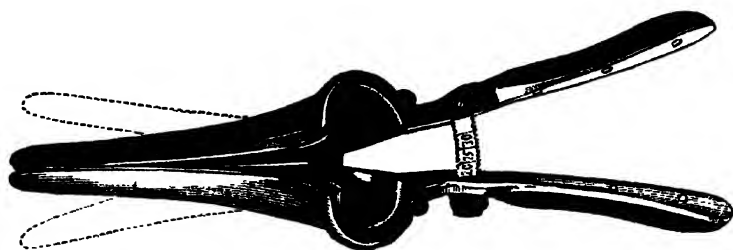
Before making an examination, we should have within reach a long pair of dressing forceps, six inches in length, and several pieces of lint or pledgets of cotton wool, a long caustic case with the nitrate of silver, and any escharotic which there may be occasion to use. They should be covered with a napkin, as their sight might frighten some sensitive persons.

Mode of introducing the Speculum.—The less preparation made for the examination the better, and the patient may be requested to lie down on a sofa in a good light before a window, but in such a case she should be elevated by cushions or the window must come down to the ground; if not, the light will not generally be thrown into the speculum; and it will be impossible to ascertain the condition of the tissues you are about to examine. In the first examination, however, a surgeon need not be so particular in strictly viewing the whole course of the canal. In a case of consultation where greater accuracy is required, or if the patient has submitted to previous introduction of the instrument, it is far better for the surgeon to place his patient in a large arm-chair; the facility for using an instrument for a patient thus circumstanced is surprising; and persons having a large practice at their own houses must necessarily have some such contrivance, which when not in use has the appearance of an easy chair. Such a piece of furniture has the further advantage of serving as an excellent operating table.

When the patient is seen at her own house, however, the bed may be drawn near the window, and the patient made to recline on the edge with a pillow under the pelvis, the feet resting on two chairs. If there be no bed or couch in the room, three chairs placed sideways in front of the window will answer the purpose of a couch. To prevent unnecessary exposure, the patient should be dressed and wear drawers, or a towel or napkin should be folded around each thigh

before proceeding to the examination. Inattention to these little circumstances will soon betray that the operator is not in the habit of conducting an examination among the upper classes.

The speculum which I employ consists of two blades or valves, between five and six inches long. Each valve has appended to it a handle of about four inches in length. When the instrument is at rest, and when being introduced, the handles are in a state of diver-



BIVALVE SPECULUM.

gence. The two valves are connected together by a joint at about the middle of their length in such a way as to admit, on compression or closure of the handles, of their separation towards and at their distal or uterine extremities.

Thus the vaginal tube moderately dilated inferiorly is widely dilated superiorly, the uterine cervix received within the speculum, and illuminated by the light reflected from its surface.

Having then placed the patient in one of the positions mentioned above,* the thighs bent on the pelvis, the legs on the thighs, and the knees widely separated, the feet supported on a stool or two chairs, according to the height of the sofa or bed,—the surgeon should place himself between the lower extremities of his patient, and requires no assistant,—an important thing in private practice. The speculum, previously warmed and greased with oil, cold cream, or pomatum, may be introduced in the following manner: holding the valves of the instrument firmly together with the right hand, the surgeon should separate the labia by means of the index and ring fingers, while, by the aid of the middle finger of the left hand, he depresses the lower part of the vulva. This should be done gradually, but gently; at the same time the extremity of the speculum should be introduced into the vagina, the handles turned towards the left thigh; the side of one of the extremities of the valve should press upon the middle finger; the other valve will necessarily be applied against the posterior surface of the meatus, along which the surgeon must pass it by depressing the instrument, taking care not to tear or excoriate the mucous membrane. As soon as the speculum has passed the ring of the vulva, it

* Dr. Locock lately stated in the discussion above alluded to, at the Royal Medical and Chirurgical Society, that he is in the habit of placing the patient on her side, and that exposure of her person is never so great as when many surgical operations are performed, and that it can always be effected without hurting the feelings of the most sensitive-minded bystander; I am glad to cite his authority as overruling one of the most imposing arguments brought against the use of this valuable adjunct to our treatment.

should be directed in the axis of the pelvis, and the operator should separate the valves ; by this means he is enabled to see the condition of the vagina and uterus, and finally, the instrument will encircle the neck of the latter organ.

It is unnecessary for this purpose, to employ a very long instrument, neither is it desirable to push it on until the neck of the uterus is embraced, as this would expose the organ to laceration, and cause great suffering if the instrument should be caught in the *cul de sac*, of the vagina, as often happens. To avoid this, the situation of the neck of the uterus can be ascertained by the previous introduction of the finger, so that the instrument may fall at once upon the cervix, and the neck of the uterus will be recognised by the smooth condition of the mucous membrane, and by its colour, which usually differs from that of the vagina. Useful indications for finding it may often be derived from the streaks of white-of-egg-like mucus, which flow from the uterus into the vagina. Should the speculum, in spite of these indications and precepts, become entangled in the *cul de sac* of the vagina, instead of pushing the instrument onwards, let the operator gradually withdraw it, at the same time that the valves are separated, and the neck of the uterus will at once come into view.

Although often called upon to employ the speculum in cases of various deformities of the osseous system in the Parisian Hospitals, I never experienced any difficulty in introducing it in the manner above spoken of, and those who for the first time attempt to follow my recommendations, must bear in mind that patience and gentleness are very necessary in duly employing instrumental examination.

In the great majority of cases, the bivalve speculum above alluded to answers every purpose ; but in very fat women who have had children, and in whom the vagina is lax, it is better to employ a large conical speculum, the end of which is protected by a plug of wood, which can be withdrawn as soon as the instrument is introduced.

There are certain counter-indications which should prevent the surgeon from introducing an instrument of any kind at least for the time.

These are, 1st, a severe inflammation of the vulva or vagina. 2nd. The existence of the hymen, which the surgeon ought generally to respect. 3rd. The narrowness of the vagina in very young girls. 4th. The occurrence of various bands of well-organized membranes, which are sometimes met with in women who have had children. 5th. The existence of menstruation, as it is then useless. The speculum may be employed, even though a woman be pregnant, provided the surgeon thinks the case urgent, and the instrument be introduced with care.

In private practice the precautions above mentioned had better be carefully adopted. In the examination of large numbers of women at public hospitals or dispensaries so much care and circumspection cannot, of course, be exercised. But I have been surprised how effectual inspections may be made without shocking the feelings of the sex, and with what rapidity large numbers of women may be passed.

In Brussels, Dr. Dugniolle, the Inspector of Public Health, having changed his coat in the bureau, seats himself in a chair on the right-hand side of a raised operating table, ready to commence his

duties. On the table is a pillow, and the edge of the table has a slightly raised edge, against which the woman may place her left foot. The patient, as she enters, bows respectfully to the inspector, mounts the three steps placed by the side of the table, lies down, raises her clothes, allowing the right leg and foot to hang down, whilst the left foot rests on the top of the steps, or against the raised edge of the table, according to the length of the limb. The doctor then examines the external parts, separates them, introduces the finger, and presses from within outwards the urethra, to see if there be any discharge from the canal; he next takes the speculum, a rather short cylindrical one, made of common pewter, the end of which is protected with a plug of box-wood, in his right hand, giving it a direction backwards, withdraws the plug, and exposes the os uteri. If all is healthy, he withdraws the speculum, the girl gets down by herself, receiving her carte, which, in the meantime, has been signed by the assistant examiner, sitting at the table, and retires after making a second obeisance to the doctor.

Mr. Dugniolle thinks there is no occasion to wash the instrument; before re-introducing it he dips the end in a little oil-jar, and, on withdrawing it, merely wipes the speculum with a towel, as well as his own fingers. He says he has no reason to suppose that infection has ever been communicated from one female to another by means of the instrument. At the end of the examination he, of course, washes his hands carefully. In about an hour and a half he had thoroughly inspected 80 women as effectually, quietly, and delicately as was possible. I was much struck with the kind, affectionate, and considerate way in which he treated these women (degraded though they were). There was, as I have said, no unnecessary exposure, and the feelings of the sex were in every way respected. Dr. Dugniolle told me, what I can readily believe, that he had never experienced the least incivility from any one of these women. The necessity and advantage of the system seemed to be felt by all parties. It was the law of the land, and as such it was implicitly obeyed as a rational and expedient one.

On this occasion I was astonished to see a large number of prostitutes whose generative organs were in a natural condition, and as healthy, or more so, than those of any equal number of modest women. This, probably, is not surprising when we consider the interest these women have in attending to sanitary regulations. There was little or no redness of the sexual organs, and no discharge; not one was sent to hospital, and in my opinion not one required it. To one remarkably fine woman, much sought after on account of her extraordinary beauty, a hint was given that if great care was not taken, a glairy discharge from the os uteri might turn out disastrously, and oblige the medical man to withdraw her carte.

Having had an opportunity of seeing the system of examining the public women at the Bureau of Police in Paris, a description of it may not be uninteresting. Dr. Denis is the medical man upon whom the duty devolves. Before a good light is placed a raised table or sort of chair, on which the woman on entering at once mounts, and supports her left foot against a raised piece of wood, the other leg

and foot hanging down, so as to enable the surgeon, seated somewhat on the right, to take the speculum—a common cylindrical one—in his right hand, and with a celerity that astonishes the bystander, the os uteri is exposed and the external organs and anus examined. Her carte is signed in the next room, so that Dr. Denis requires the presence of no assistant. That gentleman told me he examines 174,000 women a year; of these two-thirds are examined with the speculum. Among the great number I saw there were very few virgin uteri; most of the women at antecedent dates had had miscarriages or children. I took the opportunity of asking Dr. Denis the price paid for connexion with these women. At the moment I asked he was examining some woman from the low neighbourhoods outside the walls of Paris, and he repeated my question to a crooked-eyed female advanced in life. She replied “5 pence from soldiers and 10 pence from other men.” I suggested that such clients would not stop long. She replied “they could not afford it.” On being further questioned this female stated that she entertained ten or twelve men a day, but admitted that when business was brisk—as on fête days—she had had connexion with as many as forty in twenty-four hours.

In spite of this abuse of the sexual organs there was no irritation, nor would a medical man have suspected this female of being a prostitute, as far as the generative organs were concerned.

As opposed to this absence of assistance, I saw M. Boys de Loury employ the speculum in a somewhat different way at the Hôpital St. Lazare,—a Parisian institution where sick prostitutes are sent. The girl mounts a raised table, the doctor sitting on a chair below. On his right and left stands a nurse, whose duty it is to separate each knee and support the feet. On the right, sitting down, is another nurse holding a little jar of oil in which is some charpée (pulled linen) to prevent the instrument when dipped into it taking up too much of the liquid. On the left is a woman with a basin of water and towel ready for the doctor to wash his hands. The external organs having been first examined, the speculum already oiled is handed to the doctor—this is a bivalve, one with two additional branches—he taking it in his right hand inclines it to the right, so as not to press upon the parts. As soon as the neck of the uterus comes into view, the discharge is removed by little mops that are within his reach. The speculum is now handed back to a nurse, whose duty it is to wash it and be ready with another, so as to lose no time. In a large hospital like this, with plenty of assistance at hand, the division of labour can be carried to any extent.

To return from this long digression. When the speculum has brought into view the lesions alluded to at page 208, the secretions which cover the mucous membrane should be thoroughly removed by little pieces of lint fixed on the long forceps, and the affected surfaces touched with the solid nitrate of silver, or any other escharotic which may be preferred. When the irritation or inflammation extends into the os tincæ the solid stick of nitrate of silver should be passed as far as it will reach up the patulous opening, leaving it there a sufficient time to dissolve, that the deliquescent

salt may introduce itself into the lacunæ. After a few days injections may be employed in the manner described at page 199.

I have lately largely employed, with success, cylinders of potassa cum calce, as recommended by Dr. Bennet, who thus describes them :—

“I now always substitute cylinders of potassa cum calce, which, with the assistance of Mr. Squire, of Oxford Street, I have succeeded in obtaining similar to those of nitrate of silver in ordinary use. M. Filhos, of Paris, appears to have been the first who discovered, some ten or twelve years ago, that it was possible to fuse potassa and lime in variable proportions, and to run the preparation into solid lead tubes. Not finding M. Filhos’ first tubes of fused potassa cum calce by any means as energetic or as efficacious as the Vienna paste or the hydrate of potassa, I long only used them for superficial cauterization. Some time ago, however, having received several from Paris which were much more powerful, the proportions of potassa being greater,—two of potassa to one of lime,—I requested Mr. Squire to fuse these substances for me in the above proportions, and to run them into soft metal tubes. The fluid potassa cum calce invariably melting the tubes, we determined to have iron moulds of various sizes made, and to run the potassa cum calce into these.

“I have thus succeeded in obtaining cylinders of potassa cum calce, which can be used with the greatest ease, and with perfect freedom from risk, owing to their not melting as pure potassa does, although nearly as powerful in the effects they produce as is the latter substance itself. They are not free from a tendency to deliquesce, soon becoming spongy if left exposed to the atmosphere ; but if applied to a dry or nearly dry surface, the action of the caustic does not extend beyond the part touched.

“This action is nearly as energetic and deep as that of uncombined potassa ; owing to the cylinders not readily melting, they may be used without all the precautions which are absolutely requisite when Vienna paste or potassa fusa are used. All that is necessary is to see the cervix well isolated in the speculum, to wipe off the sanies that oozes from the surface cauterized, and then to apply a cotton pledget, moistened with vinegar-and-water, and tied to a piece of thread, which is to remain as a dressing on the withdrawal of the speculum. These precautions are necessary, as for two or three minutes after the application of the caustic, a straw-coloured fluid exudes, especially if it has been carried into the cervical cavity, which may slightly cauterize the parts with which it comes in contact.”—(“Bennet on the Uterus,” p. 285, 3rd edition.)

I would recommend this caustic, in preference to all others. It requires only the precaution of being kept in closed bottles ; can be conveniently used by means of the long forceps holder ; it is very manageable, burns deeply, but does not deliquesce like potassa fusa, yet makes as deep a cauterization, if that be desired ; it is likewise much more manageable in this situation than Vienna paste, and being hard, can be rubbed firmly against the affected part, care being taken that it is not broken, and part left in the vagina. The size of the moulds enables us to pass it up the canal of the uterus, and thus cauterize its walls ; but before using this or any other caustic appli-

cation, the secretion must be carefully wiped away. A little practice will soon teach the surgeon how much of the substance is required, and when it is necessary to wipe away the corroded part, and reapply the caustic.* The pain felt will be trifling at the time, but hysterical symptoms, or hæmorrhage, may come on during the next twenty-four hours, symptoms which may be readily controlled by rest in the horizontal position, and opiate enemata. The application of the caustic may be repeated at the end of four days or a week, depending on the size of the slough. In cases where there is great induration of the uterus, M. Jobert, of Paris, recommends the actual cautery; this plan, however, will never, I think, be employed in this country, nor is it necessary; but in very obstinate cases, I should have no hesitation in following the plan recommended by M. Huguier, who introduces a peculiarly shaped bistoury, and scores the os uteri in eight or ten places, to the depth of one or two lines, his object being to destroy the deeper follicles, which secrete the ropy mucus above spoken of at page 211, and then he cauterizes these scored surfaces freely with nitrate of silver. I have never had occasion to resort to such strong measures, but M. Huguier states that the patient suffers little, either at the time or afterwards, and he has not observed, metritis or peritonitis follow; from the impunity with which we may destroy large surfaces of the neck of the uterus, I am disposed to think that little reaction will follow, particularly if the operation is done between the menstrual periods.

In addition to the local means above spoken of, the general health must be attended to, and all causes that may possibly lead to aggravation of the symptoms must be carefully avoided. Great attention should be paid to the diet, and any large quantities of opium and stimulants which patients may have been in the habit of taking, should be left off. Warm clothing should be enjoined, and regular exercise prescribed, together with change of air, and other hygienic means, which need not be fuller dwelt on here.

SECTION V.

BLENNORRHAGIC AFFECTIONS OF THE OVARY.

In the two former editions of this work, it was stated, that there is one complication which was new to British practitioners; at least it is not, I believe, to be found in English works. This is *ovaritis*, which bears an analogy to epididymitis in the male. A female suffering under uterine blennorrhagia may be seized with shivering and a feverish state of the system; vomiting may come on, together with pain referred to the iliac fossa, where more or less tension may be present (in no way resembling that superficial pain produced by peritonitis); but if the finger be carried up the *cul de sac* of the vagina, and the patient desired to turn upon the opposite side, pain of a most acute kind will be felt. The blennorrhagia may cease for the time, one ovary may be attacked only, or both simultaneously, as in epi-

didymitis : revulsion will explain the partial cessation of the discharge.

A great number of ovarian dropsies may result from a chronic inflammation of that organ, the consequence of such a complication as this.

Since the above was written, Dr. Bennet has read a paper on this complaint before the Medico-Chirurgical Society, showing that the disease may occur as a consequence of simple inflammation of the uterus. To this paper I would refer my readers who are desirous of further information on the subject, as well as to the chapter on blennorrhagic ovaritis, in Dr. Tilt's monograph on ovarian inflammation, page 71.

Blennorrhagic ovaritis in one or other of its forms or consequences is probably the disease to which allusion is made in the *London Journal of Medicine* under the title

"*De Colica Scortorum Disquisitio*. Autore Martino Hassing, Dr. Med., Medico Secundario Nosocomii et Legionis Civilis Havniensis, Regiæ Societatis Medicæ Havniensis Socio. pp. 100. Havniæ: 1848."

"This dissertation," adds the editor, "contains the history of ninety-two cases treated in the Hospital of Copenhagen. The patients were all prostitutes; and the author considers that the disease under which they laboured, originated almost entirely from their mode of life. He supports his views by some anatomical and physiological reasoning, and also by the fact, that some of the patients who had repeatedly suffered from the disease while pursuing their impure avocations, found that on marrying and becoming orderly in their life and conduct, the complaint entirely left them. The affection appears, from the author's account, to differ in its symptoms little from ordinary colic: and it yields to ordinary remedies. It does not seem to be a fatal or even a very dangerous disease, as none of the patients died. The author is inclined to attribute it to the irritation of the sexual organs, and to the connexion between those organs and the colon, through the medium of the sympathetic system. We hardly think that the author has succeeded in establishing the existence of a distinct form of disease; but we must do him the justice to say, that his Thesis is written in classical language, that it offers a good example of medical reasoning, and that the treatment recommended is judicious."—(*London Journal of Medicine*, August, 1850, p. 756.)

CHAPTER IV.

BLENNORRHAGIA COMMON TO BOTH SEXES.

THERE are two important forms of disease to be considered under this division—namely, *Blennorrhagic Affections of the Eyes* and *Gonorrhœal Rheumatism*, which form most violent and obstinate complications, too often terminating in permanent lesions over which our art is powerless.

SECTION I.

BLENNORRHAGIC OPHTHALMIA.

This affection has generally been known in this country under the term gonorrhœal ophthalmia ; but various affections have been confounded under the latter term : and this want of distinction has led many surgeons to employ certain remedies and treatment, which, although good in the one variety, are not applicable to the other. It is therefore of immense importance to be quite clear as to the distinctions and varieties which modern experience has introduced ; and to no one does the profession owe so much gratitude on this score, as to M. Ricord, whom I shall largely quote in the course of this section.

VARIETIES.—Under the term blennorrhagic ophthalmia there are two, if not three affections in some respects closely resembling one another, but differing in many others. These differences are produced in part by the cause which may have occasioned them, and partly by the constitution of the patient in whom they occur.

The First variety is that affection which has been truly enough called gonorrhœal ophthalmia, the result of direct contact of the secretion of the urethra with the eye—producing those symptoms which we shall presently describe. For the reasons given at page 5, I shall in the following pages speak of the affection as blennorrhagic ophthalmia, the result of contagion, preferring that term to gonorrhœal ophthalmia.

The Second variety consists of a nearly equally violent inflammation of the eyes coming on in persons labouring under blennorrhagia, but which cannot be attributed to direct contact of pus from the urethra, and appears to depend upon the constitution of the patient ; to metastasis, as it often occurs in rheumatic constitutions ; or to a catarrhal influence. Some persons have called this a sympathetic affection ; and M. Ricord, in his late Lectures, speaks of three varieties : the *contagious*, the *metastatic*, and *sympathetic*. Admitting, as I do, that

at least two severe affections of the eye may come on during the course of blennorrhagia, I think, at present at least, we are not in possession of sufficient data on which to found three varieties, and shall therefore describe the affection here spoken of under the terms,—1st, Blennorrhagic Ophthalmia resulting from contagion ;—2nd, Blennorrhagic Ophthalmia from metastasis or catarrhal ophthalmia.

1ST VARIETY.—BLENNORRHAGIC OPHTHALMIA, ARISING FROM CONTAGION.

M. Ricord says, “ This is a very serious complaint, and one which must be treated with much energy.

“ It has been said, and there are still those who believe that blennorrhagia of the eye is always the result of the direct application of the blennorrhagic pus. I once participated in this idea, but further experience has caused me to change my opinion. Let me recall to your recollection what I have previously stated, that purulent ophthalmia follows only *urethral* blennorrhagia. It never accompanies balanitis, vulvitis, or inflammation of the uterus or its appendages. This is a curious fact, and one which has occupied much of our attention. We are well aware, nevertheless, that vaginitis, simple affection of the uterus, or vulvitis, may produce urethral blennorrhagia, which may itself produce blennorrhagic ophthalmia. We may say there is something special in the inflammation of the urethral mucous membrane. It has struck me as not a little remarkable that purulent blennorrhagic ophthalmia is much less common in the female than in the male. It is likewise a well-known fact that blennorrhagia is not nearly so often found in the female as in the male. Thus two points are well established—viz., that blennorrhagic ophthalmia can be always traced to urethral blennorrhagia, and that this form of ophthalmia is much more common in males than in females.

“ It is an incontestible fact that the discharge from an urethral blennorrhagia applied to the conjunctiva, produces an ophthalmia of the same nature. Persons have wished to contest the possibility of this means of production, by saying that the pus only touches the outside of the eyelids, and never reaches the globe of the eye. But a single point of this mucous membrane placed in contact with the discharge, suffices for propagating the disease. It is a very common thing to carry the hand to the eye ; a patient is placed in a condition several times in the course of the day to handle the penis, and is therefore liable to have his hands soiled with discharge. The female has no necessity to touch the genital organs for the purpose of making water, and hence the less risk she runs of infection. Children at birth are very liable to ophthalmia ; in such cases the contagion is due to the contact of the puriform discharges from the uterus, vagina, or the irritating lochia. Some authors, denying the possibility of contagion, maintain as the only cause of blennorrhagic ophthalmia, a general disposition acquired from the urethral blennorrhagia. They have closely watched during the daytime the movements of the patients, and have enjoined the greatest attention to cleanliness ; but they have forgotten that contagion may occur as well by night as by

day, and hence their observations are not complete. Examples may be found, the cause of which cannot be attributed to a general disposition. As for instance :

“ 1st. A patient affected with blennorrhagia, became affected with double blennorrhagic ophthalmia, and lost the sight of both eyes. His brother, who slept with him, had at the same time a double ophthalmia of a similar kind, but he recovered the sight of both eyes ; in the last case the patient had no discharge from the urethra, and there must have been direct contagion.

“ 2nd. A female made use of, for the purpose of washing her eyes, a solution of acetate of lead, in which her husband, affected with blennorrhagia, was in the habit of washing the penis ; her eyes became attacked with severe blennorrhagic ophthalmia. She had no discharge from the genital organs.

“ Vetch admits that the discharge taken from the urethra of a patient, and applied to the eye of another, causes blennorrhagia, but he does not admit of self-contagion. He says, in order to effect this, he has seen the discharge from a patient's urethra placed on the eye of the same patient without any ill consequence occurring. Such an experiment proves nothing, as particular conditions of tissue and predisposition of the eye may be necessary in order to determine purulent ophthalmia, as well as urethritis. Muco-pus placed in contact with the mucous membrane of the urethra may or may not cause urethritis. Some persons have believed that urethritis is the consequence of the Egyptian ophthalmia ; others have maintained that this disease is the effect of blennorrhagic ophthalmia, and that the disease extends from eye to eye. These two complaints resemble one another so closely that it is impossible to say which commenced the first. Thus we may assume, that according to observation, experience, and facts, there is a blennorrhagic ophthalmia the result of contagion.

“ This variety occupies only one eye ; it may extend itself from one eye to another, the discharge from one side dropping into the other eye. It has seemed to us, in fact, that the other eye becomes attacked the more easily in proportion as the bridge of the nose is small ; on the other hand, we may assure ourselves that the patient lies always on the unaffected side in order to allay the suffering ; and in this position the muco-pus of the affected eye has a great tendency to run into the previously sound organ. In some instances, the opposite eye is affected sympathetically. It is not necessary for contagion, that blennorrhagia should have existed some days ; blennorrhagic ophthalmia may even precede it, or exist alone. We have not always been able to trace the cause of purulent ophthalmia occurring in hospitals, and I am persuaded that its cause is often urethritis. Some have maintained that blennorrhagic ophthalmia might be produced by emanations—by a species of aura blennorrhagica ; according to this opinion, the disease ought to be a very common one ; for if a blennorrhagic vapour exist, patients in an hospital specially devoted to the disease ought to be constantly under its influence, yet the complaint is a rare one.

“ We will commence by studying that form of blennorrhagic

ophthalmia, of which contagion is undoubtedly the cause, be it self-contagion, or that resulting from the communication of contagion from one patient to another.

"There is no necessity that the blennorrhagia should have lasted any definite time for the ophthalmia to be developed; it possesses this property from the moment that the secretion becomes irritating.

"The muco-pus when secreted may produce the complaint in the eye, in one or two days, or two or three months, after the commencement of the urethral complaint.

"**SYMPTOMS.**—Ophthalmia which is the result of contagion runs a very rapid course. It commences usually in one eye only; the other eye may be affected subsequently, either in consequence of the contact of the secretion of the affected eye, or by the means of the mechanism of metastasis. Some patients complain of a feeling of heat at the onset, others of a stinging sensation. There is neither fever nor pain in the head. Soon, however, they feel as if some portions of sand had entered between the globe of the eye and the conjunctiva: and the membrane becomes injected. At this stage the inflammation is circumscribed; it is situated most commonly on the conjunctiva covering the lower lid. At first the secretion consists of mucus, then it becomes muco-purulent. In the early stage there is no secretion of any kind; but this period of dryness is so short that it may pass unperceived. Up to this time the eye is but partially implicated, later the entire organ is attacked; the mucous membrane is injected and red, presenting a brick-red hue; the inflammation now becomes very intense. Up to this time there has been no reaction, or there has been but slight supra-orbital pain. The secretion of the tears is most abundant; they gush out, and produce a scalding pain similar to that felt in micturition. The sub-mucous palpebral cellular tissue is speedily attacked. At first there is simple oedema, and then it takes on a phlegmonous character, just as happens in balanitis. The eyelid swells, becomes convex, of a red colour, assuming an erysipelatous tint; it falls down by its own weight, enclosing the lower eyelid; the edge of the lower lid is thus pushed towards the globe of the eye. Trichiasis then occurs, which produces further inflammation of the organ.

"If the lower lid swells much, its edge becomes on a level with the upper one; in such a case there is no trichiasis, but, on the contrary, ectropium may result. Cases have been cited to show that the mucous membrane alone may become inflamed, the eyelashes being turned outwards. These cases are excessively rare; I have never had an opportunity of observing them. The swelling and infiltration soon take possession of the sub-mucous ocular cellular tissue. At first we meet with only simple oedema, followed, however, by phlegmonous oedema. Sometimes we observe a true phlegmon. The swollen mucous membrane forms a thick fold or rim round the cornea; this we call chemosis. In proportion as the disease gains ground, and as the phlegmonous disposition increases, it rarely happens but that the symptoms in the surrounding parts become aggravated. Pains in the head, of a more or less violent kind, and fever come on; nevertheless the eye still supports the light. The other structures of the eye,

however, do not always remain unaffected ; the cornea now participates in the disease. The secretion almost always assumes the same characters as in blennorrhagia ; at first of a clear yellow, it becomes darker, and then brownish ; lastly, if the inflammation be very violent, it may become sanguinolent. It may be very thick, similar to that of phlegmonous erysipelas. We shall find further on, that particular indications relative to the prognosis have been attempted to be drawn from the nature of the pus. The eyelids generally become immovable, the edges are glued together, and a complete cavity is thus formed, in which the tears and the pus collect ; thus the eye is constantly bathed with these irritating secretions. The blennorrhagic ophthalmia is more severe in proportion as the eyelid is small ; just as in balanitis, the disease is violent in proportion as the preputial opening is narrow.

“ Up to a certain point the patients preserve their sight. At the base of the swollen margin of the conjunctiva the brilliant and unaffected cornea is seen ; but in a short time it becomes affected, after a resistance depending on a difference of tissue, the cornea loses its brilliancy, plastic effusion takes place between its layers, it becomes opaque, softened, and small purulent deposits take place within its substance. These little abscesses may open externally, or burst into the anterior chamber of the organ ; perforation takes place, as a consequence, more or less complete, and larger or smaller, as the case may be, producing consequences depending on the size of the opening and loss of substance. In some cases the cornea is most rapidly destroyed, it seems to perish at once ; this happens when the inflammation is very violent and the chemosis very severe. The inflamed portions undergo important changes. The mucous membrane has at first an appearance like velvet ; it then becomes granular. These granulations become larger and larger in proportion as the disease advances ; but it is only in the latter stages of the complaint that the enormous granulations are seen. This form of ophthalmia may run through its phases, or destruction of the eye take place, and extend to the internal structures, in twenty-four or forty-eight hours, or the process may occupy five or six days ; the rapidity will be greater if it follow contagion, and if one eye only is attacked. If the disease be allowed to proceed unchecked, the loss of the eye is certain. The first favourable symptom consists in diminution of the swelling, and a creasing of the eyelids. The fever abates, the secretion diminishes, becoming more like pus ; then it assumes the character of muco-pus, and lastly of mucus ; the redness diminishes, the chemosis grows less and less, and the patient is able to open the lids. As the disease diminishes,—if the inflammation proceeds from contagion,—no relapse need be dreaded, as is often to be feared when the complaint arises from metastasis.

“ **DIFFERENTIAL DIAGNOSIS.**—The principal means of diagnosis consists in the co-existence of the blennorrhagia, or the contagion from one individual to another. Apart from these two circumstances, there is no symptom which can distinguish this complaint from Egyptian ophthalmia, either in the nature of the secretion, the aspect, the course, or the severity of the disease. Surgeons have attempted, by differential

symptoms, to diagnose virulent from mild forms of ophthalmia. M. Herion has found in the former, five auricular inflamed glands, but no such are found in blennorrhagic ophthalmia; and it is in vain to look for them in cases of severe inflammation. At the same time, we do not deny the possibility of the occurrence as a consequence of severe inflammation.

"PROGNOSIS.—This is always very serious. Lawrence has seen the eye lost nine times out of fourteen cases. During the time I was Dupuytren's interne I never saw that surgeon cure a single case; the eye was almost always lost. Since then, however, the results have altered, we cure as many eyes as we lose; but it is necessary to employ a very energetic treatment, and to pay the greatest attention to the patient, indeed to be constantly at his elbow.

"TREATMENT, Local.—When a surgeon is called on to treat this form of blennorrhagic ophthalmia, he should never forget the rapidity with which it may destroy the organ. A short delay may deprive the patient of sight. The most perfect rest of the eye should be enjoined; even mental emotion may produce the most disastrous consequences. The patient's head should be raised, the chamber darkened, and a strict antiphlogistic regimen prescribed.

"Local remedies should at once be resorted to. The greatest dependence must be placed on the employment of the solid stick of nitrate of silver. It should be passed over the affected surfaces, so as to whiten and modify them, without any attempt to destroy the tissues. The eyelids should be everted, when this is possible; and commencing with the lower lid, in the manner above alluded to, the surface should be well syringed, so as to remove any trace of undissolved nitrate of silver, and the eyelid replaced. Some persons have recommended the anointing the cornea with oil previous to applying caustic, with the object of protecting that portion of the eye; this, however, is unnecessary when the eye is well syringed out. This should be done most thoroughly, however, or there is great danger of the cornea's being affected by the salt. In cauterizing the lower lid, the surgeon may (provided the inflammation has passed beyond the oculo-palpebral edge) carry his caustic even on to the mucous membrane covering the cornea. The same plan must be pursued with the upper lid. As soon as the first cauterization has been effected, the patient must not be left, but watched and examined as often as possible.

"The secretion for the moment is arrested; but the instant that the film formed by the nitrate of silver is detached, a secretion, at first clear and subsequently sero-sanguinolent, commences, similar to that which follows injections into the urethra in the abortive treatment of gonorrhœa. As long as little whitened tufts exist on the surface of the membrane, consequences of the cauterization, and as long as the liquid secreted is not re-assuming a purulent character, the good effects of the caustic are evident; but the moment these little tufts have disappeared, and the secretion resumes its former characteristics, it is necessary to re-apply the nitrate of silver in the same way as before. It may have to be used three times in the course of the day.

"When called on to treat children, or patients who have very small eyes, concentrated solutions of nitrate of silver may be advantageously

employed. The eye should be thoroughly touched over with a camel's-hair brush, as in the former case. During the day-time it should be cleaned very often; without this precaution the surfaces will be constantly bathed with the secretions. Such cleaning requires the greatest nicety. The eyelids must be gently separated, and warm water carefully injected by means of a glass syringe.

"The eye should be fomented with poppy and mucilaginous fomentations; the pledgets of lint should be light. Poultices should be avoided, for they have a tendency to draw the blood to the organ. Belladonna friction may be employed with advantage to the brow. Mercurials should never be employed in the early stages of catarrhal inflammation; for, independently of their antiphlogistic and resolute action, they also have a tendency to cause a flow of blood to the part, and may thus act injuriously in these cases, but in the latter stages they may be of great use.

"If the blennorrhagic ophthalmia is complicated with chemosis, the surgeon should at once remove it while œdematous; at a later period, when it has become phlegmonous, the mucous membrane is too tense, and cannot be pinched up. The excision should be made with semi-circular-shaped forceps and curved scissors.

"The effect of this excision is so advantageous, that some surgeons (Samson) have had a tendency to employ it exclusively: it produces a local depletion, the congestion disappears; but cauterization should be employed before the excision, for the blood pouring out would prevent the action of the caustic. If the chemosis has already become phlegmonous, it is useless to attempt excision. The parts should be freely scarified, but its good effects are much less apparent than those of excision. In the intervals between the cauterization with the nitrate of silver, we should not lay aside special remedies; we may employ daily three or four injections between the lids, containing solutions of nitrate of silver, in the proportion of \mathfrak{zss} . of the salt to \mathfrak{zj} . of water. If the eyelids are œdematous, they may be pricked with a lancet.

"*General Treatment.*—The local means above spoken of should be seconded by general treatment. If there be much reaction, repeated bleeding may be required; leeches may be employed along the course of the jugular vein, in the fossa canina, behind the ears, but always in sufficient quantities to allay irritation; a small number only determine the blood to the part. Repeated applications of leeches, applied a few at a time, are found to be very serviceable, and there need be no fear of debilitating the patient. Saline purgatives may be added; these have the advantage of carrying off the serous portion of the blood through the intestinal canal. Mercurials only appear to cause vascular injection of mucous membranes, and thus aggravate the complaint.

"*Counter-irritation.*—Mustard poultices may be applied to the feet, but mustard in foot-baths should be avoided, as the essential oil which escapes may increase the irritation of the eyes. Blisters, when properly applied, are of infinite benefit, but they are of most service when the inflammation is passing off. They should never be placed close to the affected part, but behind the neck, and sufficiently low to avoid the necessity of applying bands, or any means of constraint, which might tend to further increase the inflammation of the eye.

"The Treatment of the Urethral Discharge.—Surgeons who think the disease principally depends upon metastasis, have always attempted to recall the affection back to the urethra by re-inoculating the patient with the pus from the eye, or from some other patient; this is very dangerous, as it is possible to inoculate the patient with a chancre if another individual be chosen, for the surgeon cannot be sure that there may not be a chancre in the urethra of another. Some surgeons have recalled the discharge, by passing a catheter; it very rarely happens but that the discharge in the urethra diminishes, in proportion as the eyes begin to be affected, but it never entirely ceases. These ideas are therefore erroneous, and re-inoculation need never be attempted. We employ the balsams, together with other means spoken of, but not with any intention of relieving the ophthalmia; for when the affection results from ophthalmia, contracted from another individual, we never make use of balsams; in attempting to cure the urethritis, we wish to remove one of the sources of the disease, and consequently diminish the chances of relapses. When all the above means have failed, and the perforation takes place, no special treatment need be required, but the affection must be treated as one of keratitis."—(*Gazette des Hôpitaux*, 1848, pages 315 and 335.)

2ND VARIETY.—BLENNORRHAGIC OPHTHALMIA.

(SYMPATHETIC, METASTATIC, OR CATARRHAL.)

SYMPATHETIC VARIETY.—When one eye is affected with the blennorrhagic affection, the result of direct contagion, the other organ may become implicated without direct contact of the secretion, and independently of the general state of the system. We can easily conceive the possibility of this fact, inasmuch as a simple inflammation, without any secretion of purulent matters, is known to pass from one eye to the other, without our being able to call either metastasis, direct contagion, or a general condition of the system, to our aid to explain the phenomenon. These consequences happen after the operation for cataract performed on one eye. Surgeons have admitted that sympathetic ophthalmia may follow urethral inflammation. It is very difficult to understand this sub-variety, and it is much more probable that the cases of it depended upon catarrhal or purulent ophthalmia occurring as coincidences. We might suggest, that under the influence of a general state of system, a purulent and catarrhal inflammatory affection developed itself at the same time in various mucous membranes, but particularly in the urethral and conjunctival membrane. We admit the possibility of this co-existence, without admitting that the local affections have the slightest dependence on one another.

METASTATIC OR CATARRHAL VARIETY.—Some surgeons are believers only in metastasis; a large number of those who admit only this cause, maintain likewise the identity of chancre and blennorrhagia. The observation of numerous instances induces me to believe, that in persons liable to rheumatism, (or even those who have never suffered from the complaint,) ophthalmia may come on, particularly while a discharge exists in the urethra, which, at its commencement,

differs in no respect from cases of blennorrhagic ophthalmia, except in its origin. Still we may suspect such a rheumatic or catarrhal complication from a variety of circumstances, which it is needless here to allude to ; but whatever our suspicions, in a few hours the diagnosis will be quite clear ; if purulent matter is not secreted in abundance, if chemosis does not occur, if inflammation is held in check by ordinary remedies, we may then hope that the case will terminate favourably, and I would not think of heroic remedies. No one can have greater reliance than myself on nitrate of silver as a remedy in gonorrhœal ophthalmia, *the result of contagion* ; but I am equally convinced that it is a pernicious agent in a *rheumatic diathesis*. The nice point, in cases like the one mentioned below, is to decide on what is to be your *early* treatment. In private practice, however, when we remember that rheumatic cases are common, that those depending on contagion are very rare, I would always try the simple plans first, and give the patient the chance of the disease being rheumatic. If, on the contrary, the disease goes on unchecked, and there is reason to suspect that the case is one of contagion, I would fearlessly use nitrate of silver ; all modern experience points that way. In confirmed cases of severe purulent disease, ordinary remedies are at fault, and if nitrate of silver has not succeeded, in all probability a bad diagnosis has been made, and the caustic has been employed in a rheumatic or catarrhal case. The recital of a well-marked instance of the latter variety may not be uninteresting to the reader, as it will give him a good idea of the disease, as we meet with it occasionally in practice.

Gonorrhœa of five days' duration, treated by copaiba. paste, and injections, followed by irritation of the neck of the bladder, and catarrhal or metastatic ophthalmia.

Jan. 25, 1848.—A middle-aged, thin, spare, and irritable gentleman called on me, suffering from gonorrhœa, which he had contracted in promiscuous connexion, that dated twelve days back. The discharge had appeared five days, during which time he had allowed it to run on without treatment. The scalding slight ; the discharge rather abundant. I prescribed paste (see page 65), and nitrate of silver injections.

Observations.—I shall briefly allude to the treatment which immediately followed. The first injection was followed with pain, lasting three hours, and this on the second time the nitrate of silver was employed, lasted five hours, a most unusual occurrence. The tannin and zinc injection was subsequently used, and the paste continued. On Feb. 5—that is, ten days after I first saw my patient—irritation of the neck of the bladder came on, without his having committed excess, or used unusual exercise, and he was treated on the plan laid down at page 176. On Feb. 12—that is, a fortnight—gentleman consulted me and whilst the bladder was still, though in a less degree—the eye became affected, and this led by to the immediate description of the symptoms, which I have given full, as I find them in my note-book. There is ery-

10 o'clock A.M., Feb. 12, 1848. Present. Sewer lids. The denseness (a dull brick-red) of both the upper canthus there is conjunctiva is somewhat injected and

swelling, and a feeling as if sand were in the eye ; some tendency to lachrymation, but little pain on exposure to light.

History.—The eye became affected last night, after reading by candle-light, and a walk home in the cold. Thinks it not possible that he could have touched the eye with his finger after washing the penis.

Treatment.—Lotions of diacetate of lead.

1 o'clock P.M.—Little difference in the symptoms, and not wishing to take the entire responsibility, the opinion of a distinguished oculist was taken.

5 o'clock P.M.—Condition of eye : the caruncle red and puffy, conjunctiva red, the sclerotica free from inflammation ; redness of lids less, and lids wrinkled, as if inflammation had subsided ; lachrymation slight ; secretion not purulent, as far as we could judge ; no pain ; light not affecting the eye, but pressure on ball giving some suffering, though uncertain where ; pulse irritable, easily compressible. Excluding the knowledge of the previous history, the case bore all the features of a catarrhal affection of the eye ; still, on the whole, it was considered advisable to treat the case as if it were gonorrhoeal ophthalmia, and the following line of practice was pursued. The position to be the recumbent, the head raised ; rags wetted with the following lotion to be constantly applied to the affected eye.

R Alum gr. xvj.
Liquor. Opii Sedativ. ℥iiss.
Aque Sambuci ℥vj.
M. ft. Lot.

The eye to be bathed three or four times during the night with the same lotion ; a shade to be worn over both eyes ; leeches were not thought necessary. A blister was ordered to be applied behind the ear, and zinc ointment to be placed on the lids and cheek at bed-time to prevent excoriation from the secretion.

The patient to take the following mixture :—

R Potass. Nitr. ℥ss.
Acid. Nitr. dilut. ℥j.
Syr. Aurant. ℥iij.
Tr. Hyoscy. ℥ij.
Aque puræ ℥v.

M. ft. Mist. Sumat. coch. iij. magna ter die.

he diet to consist of fish or broth, together with a little boiled mutton.

Feb. 15.—To-day both eyes are equally affected ; the inflammation came on in the hitherto sound organ the night before last ; there is more pain than on the 12th ; the conjunctiva of both eyes is equally acted ; the secretion is not purulent, but more abundant, photophobia more considerable (though wearing a shade) ; little pain, no marked condition of the membrane. The blister only partially acted, now quite healed ; bowels pretty regular, but blood passes by rectum ; discharge from urethra abundant ; makes water freely, and there is no tenesmus. To apply a blister behind each ear and continue lotion and medicine.

Feb. 16.—Blisters have risen well ; conjunctiva still considerably

injected ; there are floating masses of lymph in the secretion, but no pus ; no chemosis or granular condition ; no pain ; has continued, as before, the medicine. Blister dressed with savin cerate ; pulse 100, irritable ; to improve diet a little.

Feb. 17.—Amendment has commenced ; pulse feeble ; circulation in extremities languid. To take infusion of cascarilla and meat.

Feb. 21.—The redness of conjunctiva is now fast disappearing ; pulse 80 to 100, irritable without power ; blister nearly dry, although dressed with savin ; there is still a small quantity of mucus in the urine ; discharge from urethra is less ; although some pain is felt in making water. To take quinine 2½ gr. three times a day, with wine and water, but keep open blister ; bowels regular ; blood still passes by the rectum.

March 1.—The eyes were quite well yesterday (so he states), to-day the conjunctiva is a little injected ; has been taking wine and water, but principally farinaceous food ; no quinine ; blister dry for three days ; the urine deposits only a little mucus, but the calls to make it still frequent at times ; chordee troublesome at night ; discharge profuse. To take copaiba capsules and cascarilla mixture, to leave off wine, but to continue his meat.

March 10.—Has had a relapse in both eyes from working and going out too soon, but discharge diminished ; to employ tannin and zinc injections every day, and continue capsules.

March 25.—This patient states that he used the injection, which nearly cured the discharge, but it returned again ; and on recurring to the injection it gave him so much pain that he discontinued its use, and he has not employed it for eight days ; recommended him to take cubeb paste instead of capsules, to use the injection half the strength, and increase it ; there is a good deal of discharge at present and chordee at night, with induration around the meatus.

April 25.—Went into the country on business soon after I saw him, when he had a relapse in his eye ; got well by sedatives. The discharge is now nearly gone ; relieved principally by baths, and I ordered him steel and aperient medicine occasionally.

I have lately met with two other cases differing little from the above, except that severe rheumatic symptoms accompanied the affection of the eyes in both instances, but the sight was recovered entirely under similar treatment ; the discharge and rheumatism, however, lasted a long time, and were equally unaffected by treatment.

CAUSES, PREDISPOSING AND EXCITING.—“It is an indisputable fact,” says M. Ricord, “that when contagion is impossible, we find patients affected with ocular blennorrhagia following that of the urethra. It is not only after having placed our patients in a position rendering it impossible for them to infect their eyes by discharges from the genital organs, but after judging of the aspect and the means of producing this affection, that we have arrived at the belief in metastasis.

“Blennorrhagic ophthalmia which appears without being caused by contagion is most frequently related to, or depends upon some rheumatic affection, nevertheless the rheumatic element is not necessary.

“Abernethy admitted an irritative state in order to explain the development ; this is what we understand by metastasis. The origin

of the term comes from the wandering character of the complaint ; it oscillates, disappearing in one place to reappear in the other, and in this respect does it not resemble a rheumatic affection ? Do we admit metastasis in rheumatism ? In general it is young subjects, who have a lymphatic temperament and strumous diathesis, that we find disposed to rheumatism, and who are subject to pains about the joints ; in fact, gouty subjects. Surgeons have blamed the injudicious use of the balsams and injections ; but we must repeat here what we said in speaking of epididymitis, that in the great majority of cases the patients affected with the complaint in question, have never used either one or the other substance ; moreover the complaint does not usually occur during the first few days ; and lastly, the same patients present these anomalous symptoms, namely, gout or rheumatism, every time they are attacked with urethral blennorrhagia. It is when the blennorrhagia is subsiding that this form of blennorrhagic ophthalmia commences. It by no means follows that the discharge is very profuse, contagious, or irritating.

"It has been only occasionally remarked, although it is an important observation, that in this variety both eyes are generally affected, either both at once, or one and the other alternately. It has been said, that in the ocular blennorrhagia one eye only is attacked, and that in Egyptian ophthalmia both eyes may become implicated. We have already stated that it is in *contagious* ophthalmia that one eye only is affected.

"DURATION OF THE DISEASE.—It is much longer in this variety than in the form resulting from contagion ; it is very liable to relapse ; it may leap from one to the other organ, as we noticed in speaking of epididymitis ; very frequently it is preceded, followed, or accompanied with affection of one or more joints, and the larger or smaller articulations may be implicated. We frequently observe a sort of intermittence between the gleet and the affection of the eye. The three complaints, blennorrhagic ophthalmia, urethritis, and affection of the joints, may, however, all exist at the same time.

"SYMPTOMS.—When the morbid agent acts on the entire mucous membranes, we may meet with all the symptoms described under the head of ophthalmia, as a consequence of contagion. In the commencement it is very difficult to distinguish the two varieties ; very frequently the iris may become implicated, and some authors have thought fit to assimilate this complication to iritis, the result of syphilitic infection ; but we find in the form of iritis coming on during this variety of blennorrhagic ophthalmia, characters analogous to those of the iritis met with in rheumatic rather than in syphilitic affections, and styled rheumatic iritis.

"Under such circumstances the sclerotic vessels of the eye appear injected, the globe becomes tense and painful, the suffering is deep seated. In addition to these phenomena, a particular state of the interior of the eye is superadded, a change in the colour of the cornea takes place, depending on inflammation of the membrane which lines the posterior surface of the cornea ; it becomes, in fact, *opaline*. The membrane lining of the iris soon acquires the same aspect ; the secretion of the aqueous humour augments, and a true hydro-oph-

thalmia succeeds ; the patients complain of photophobia, and if the inflammatory state gains ground, true photophobia results. The secretion of the tears increases, effusion of albuminous matter takes place into the anterior chamber, followed by albuminous deposits.

"Let me remark, that there is but slight tendency to suppuration, as is the case in rheumatic affections. The inflammation of the membrane of the aqueous humour may, in fact, be likened to inflammation of the synovial membrane of the articulations. Notwithstanding this, inflammation of the iris may produce severe accidents, contraction of the pupil may result which may permanently distort the organ, depending upon attachment of the free edges of the iris by pseudo-membranous secretion, and cataract may result. Most frequently the affection commences by a catarrhal affection of the mucous membrane of the eye, and extends to the iris. In some instances the iris is first attacked.

"PROGNOSIS.—This form of catarrhal and rheumatic ophthalmia, if not recognised, may become exceedingly severe ; but when its symptoms are well understood, and treated at the commencement, it presents a much less unfavourable prognosis than that affection of the eye which is the result of direct contagion. The entire loss of the organ, and the suppuration of the eye itself, is much less to be dreaded.

"TREATMENT.—In cases where the affection depends upon the rheumatic element, or where the aqueous humour becomes the seat of a plastic secretion, and the contents of the chambers of the eye become turbid, we should have recourse to the antiphlogistic remedies spoken of under the head of treatment of contagious blennorrhagic ophthalmia, and great attention should be paid to combating the photophobia, and photopsia, and all proper means should be employed in destroying the plastic tendency of the inflammation. Belladonna frictions and belladonna given internally, are attended with very good results. Mercury may now be used, and, when carried even to salivation, has the happiest effect in destroying the plastic tendency. Colchicum, blisters and other means, which are detailed under the head of gonorrhœal rheumatism, may also be now employed with advantage."—(*Gazette des Hôpitaux*, 1848, p. 337.)

SECTION II.

GONORRHOEAL RHEUMATISM.

IN the first edition of this work, rheumatism was only incidentally touched upon, as I had great doubts whether there was a direct relation between this affection and blennorrhagia. Private practice has, however, convinced me that there is a very strong connexion between them, and I shall now direct the reader's attention more fully to the subject.

CAUSES.—Predisposition and hereditary tendency to gout and rheumatism have, doubtless, a very considerable effect in inducing the

latter affection, when a person is suffering under gonorrhœa. Explain it as we will, the fact is undoubted. I have already cited a well-marked instance at page 22, and I could add others if necessary ; but predisposition and the appearance of gonorrhœa seem generally insufficient alone. The concurrence of cold and a lymphatic temperament are undoubted adjuvants. Rheumatism, particularly the gonorrhœal form, is much more common in a chilly, moist climate like ours, than in the dry, warm south ; but here science and observation desert us. The relation between the two complaints admits of no explanation. Persons have asserted that rheumatism was caused by the discharge being driven into the system. The error of this opinion has been already dwelt on ; and it has been shown that rheumatism comes on in some persons before any treatment has been employed against the gonorrhœa. I cited, at page 22, the case of a patient who hurried off to me the moment he contracted gonorrhœa, fully and practically convinced that if the gonorrhœa was not at once cut short, he would inevitably suffer from rheumatism, which would affect him for many months.

The opinion that curing a discharge produces rheumatism is another popular error ; for although it may be often true that an acute attack of rheumatism causes a *diminution* in the discharge, the running usually returns, and presents one of the obstinate features of the complaint. For one case of rheumatism coming on where the discharge has recently or suddenly ceased, we find ten where it remains in *statu quo*, invincible to all our specific means of treatment.

It would almost appear as if rheumatism enters the system by the urethra. The case cited at page 22 would lead one to think that the secretion of the uterus, coming in contact with the urethra, did introduce itself as a foreign poisonous substance, and induced a severe attack of rheumatism. But those who have seen rheumatism coming on after the passage of sounds and lithotriptic instruments, know that foreign purulent matter is not necessary. It is only requisite to set up an inflammation of the urethra, and you find rheumatism presenting itself, not in all cases, but in many persons who are previously predisposed to it by hereditary tendency. The following case illustrates this particular :—

A thin, spare man had long suffered under a discharge and a very tight stricture situated at the membranous portion of the urethra ; the bougie was introduced, and the case went on well for some days, when fever supervened, orchitis came on, and seemed to affect principally the fibrous coverings of the testis. While recovering from this attack, rheumatism settled in the knee-joints, and the synovial membranes were successively filled with fluid ; the disease, on abating in the joints, fixed itself in the intercostal muscles, and much alarm was felt for the pericardium, but this escaped ; finally the sclerotic coat of the eye became affected, and iritis followed.

We must view the subject broadly ; isolated cases prove little ; and in common with all who have written conscientiously on the subject, I for one must admit my ignorance of the laws of this prorean disease. But although difficult to understand, we should by no means hesitate to observe it accurately, in the hope that on some

future day light may be thrown on the cause, for at present we know of no relation between the urethra or the elbow, the ankle or the mucous membrane. We can only say, that in gonorrhœa the system is so modified as easily to become affected by rheumatism.

SYMPTOMS AND CAUSE OF THE COMPLAINT.—Although doubts may exist upon its cause, the patient who is attacked with the complaint cannot mistake the symptoms, which differ from acute rheumatism, in not usually presenting the same acute inflammatory character. There is, on the contrary, little general febrile disturbance or severe local inflammatory symptoms, and little tendency to metastasis occurs. Most frequently one joint is attacked at a time, and the disease, having taken possession of it, appears disinclined to leave it or attack other joints. This has been considered pathognomonic of gonorrhœal rheumatism, but it is not always the case, as I have seen many exceptions to this rule, which is, however, generally correct.

In gonorrhœal rheumatism there is a great tendency to effusion, but suppuration rarely occurs, and the complaint assumes a lingering, chronic form, which wears down a patient, and gives the greatest annoyance to the medical attendant. Hence the prognosis must be always guarded. Life is seldom in danger; but the patient should be told that a speedy cure cannot be expected, and relapses will frequently recur. A patient gets better, nearly well, a change takes place in the weather, and all the symptoms return with redoubled severity, particularly in our climate, which gives the profession ample opportunities of studying the rebellious character of the disease.

PATHOLOGY.—In the commencement, gonorrhœal rheumatism has been supposed to attack the muscular structures, but great doubt may be entertained, whether even in the early stages, the fibrous tissues are not primarily attacked, and whether the pain does not result from the fact that the muscles are inserted in these fibrous tissues, causing accordingly aggravated suffering when any movements are required.* At a later period, all are agreed that it is the fibrous tissues which are affected, and they become complicated with affections of the mucous and synovial membrane, or there is a new extension of the inflammation to the structures, which ultimately become severely compromised. Thus the joint, the eye, the testes, and bladder, may suffer severely, as has been shown in speaking of these different organs, particularly in certain constitutions predisposed to the disease. There is but little predisposition to attacks of pericarditis in gonorrhœal rheumatism, but pain in the intercostal muscles is not uncommon.

TREATMENT.—Since the second edition of this book was published so much additional light has been thrown on this disease, and so many

* Brodie describes several interesting cases of affections of the joints, attended with discharge from the urethra, under his first chapter, headed, "ON INFLAMMATION OF THE SYNOVIAL MEMBRANE," from which we may infer, that he believes that the disease commences in the synovial membrane. That this often happens no one can doubt, but in many others, there is no symptom of effusion, the disease, as stated above, being confined to the fibrous tissues. I would recommend the perusal of these cases to my readers, as bearing out many of the points noticed in this article. Thus we find relapses very common; we likewise learn that affections of the eye attended these rheumatic attacks, which seemed to yield rather to time than to treatment.—("Brodie, on Diseases of the Joints," page 52, 3rd edition.)

new facts have been acquired as to its treatment, that we need no longer to the same degree dread the appearance of swelling in any of the larger joints either after the passing of an instrument or an attack of gonorrhœa. In such a case the course of action I have found the most beneficial is as follows: I at first apply the hottest fomentation that can be borne to the joints, and cover the flannels with oil-silk; a little later I apply mustard poultices to the joints night and morning. Having previously administered a brisk dose of calomel and jalap, I prescribe large doses of iodide of potassium, eight or ten grains three times a day, taking the precaution to administer it in large quantities of fluid. I keep the patient in bed for a few days. At the same time that I treat the affected joint locally, and attempt to influence the system by the potash, I find no danger or difficulty in treating the disease in the urethra; if there is stricture, the swelling of the joint following the passage of the instrument need hardly ever, I find, deter us from dilating the urethra in the manner described at page 100; and if discharge is abundant I should have no scruple in employing injections according to the indications present, and with the precautions mentioned at page 67. As soon as the acute symptoms have yielded, tonics, particularly quinine, should be given in sufficient doses to act on the system, and a generous diet should be allowed. Want of rest may be relieved by Dover's powders. The course of the disease requires watching, but it is surprising how these hitherto hopeless cases rally under this treatment, which almost seems specific in at once relieving the complaint.

It must, however, be admitted that there are some constitutions in which iodide of potassium appears to have little or no effect, and others in which it cannot be taken at all. We should not, however, come hastily to this conclusion. When we come to speak of the administration of the remedy in the second portion of this work, it will be seen that the mere occurrence of effusion of the eyes and face does not counterindicate its use. Experience has taught us that in many cases, if we persevere, the unfavourable symptoms disappear, and the constitution tolerates the remedy.

In the chronic forms of the complaint recourse may be had to the iodide of potassium, and a medical friend of mine declares that the greatest benefit will be derived from a long-continued course of colchicum, which he gives for months, in the following form:—

R. Ext. Colchici Acet. . . . gr. j. .

Pil. Hyd. gr. iij.

Ext. Nucis Vomicae . . . gr. ss.

M. ft. Pil. omne nocte sumend.

The best results may be obtained from change of air, and if the patient can afford it, residence in a warm dry climate should be strongly recommended; but before resorting to this expatriation, a well-directed system of friction to the affected limb should be perseveringly tried. I have seen the happiest results follow this plan, which acts by re-establishing the circulation, and promoting the absorption of the effused structures.

I have seen much advantage result from the employment of the Lamp bath. A short description of the way in which it may be used

in a private house, where it may be difficult to manage warm or vapour baths, may be of practical utility.

THE LAMP-BATH.—A cane-bottomed chair with a cloth on it, or one covered with horse-hair, is placed in the centre of a cool room. A small spirit-lamp made of tin, with an extinguisher to fit it, is lighted and placed under the chair on which the patient is seated naked, and three blankets successively carefully folded around him coming up closely to the throat. A towel is tucked in as a sort of bib or tucker to catch the perspiration, which soon begins to fall from his face. An attendant should remain in the room, as the patient is perfectly helpless. The patient sits on his chair for twenty minutes or half-an-hour. He soon begins to feel damp; the perspiration increases till the sweat trickles down the face and the whole body. Three glasses of cold water should be given him successively at intervals of five minutes, to increase the perspiration. I have never seen such profuse sweats produced by any other method. After twenty minutes or half-an-hour, the lamp is put out, and the blankets one by one taken off. The patient should then be sponged or sponge himself in a shallow bath, a most refreshing operation; cold water is added until the water is gradually cooled down to water with the chill off. The patient is then rubbed dry with a rough towel and put into bed. After this cooling bath the skin ceases to transpire and becomes comfortable and cool. This lamp-bath may be repeated every other day. I question if the patient's loss in weight may not equal that of the stokers at furnaces, who, it is said, lose five pounds in weight in forty-five minutes.

Latterly I have seen some patients much benefited by a residence at the different water-cure establishments. The regular mode of living, the early hours, the exercise, the pure air, the treatment of the skin which enables it to perform its functions duly, and the constant occupation which such treatment entails, have done much good. But as soon as the patient returns to his usual sedentary habits and begins to indulge in the luxuries of the dinner-table, relapses so frequently recur that I begin to have some doubt whether repeated visits to hydropathic establishments do not eventually weaken the patient's constitution, and ultimately tend to shorten life by impairing the vital powers.

SECTION III.

BLENNORRHAGIA OF THE ANUS.

HAD I the option of passing over the subject of this chapter in silence, I would gladly do so. Nothing but the fact that it is a definite part of the subject which I am describing, and that therefore I am in a manner bound to deal with it to some extent, could induce me to enter at all into details that are at once humiliating and disgusting. The crime known in the calendar as "an unnatural offence" must be punished, and its consequences must be inquired into. Though all

may stand aghast at its enormity, the judge and the surgeon have a duty to perform.

It is lamentable to think that human beings should be so debased. But the indisputable results of public inquiries inform us that organized bands of miscreants have existed, who have been successful in extorting from their wretched victims large annuities under the threat of public exposure.

My object in bringing forward the following details, which I believe are not to be found in any English work, is, in addition to my desire to render this work as nearly as possible complete, to aid in the conviction of offenders, and in the exculpation of those who are innocently accused of this enormity.

I shall describe, as briefly as I can, the appearances which, from well-ascertained facts, are noticed in those who have by their own subsequent avowal, been in the habit of committing unnatural offences.

SYMPTOMS IN THE PASSIVE INSTRUMENT.—The man who has been habitually the *passive* instrument in these crimes usually presents a funnel-shaped formation of the rectum, a relaxation or mere ring-like contraction of the sphincter ani, together with enlargement of the gut beyond the muscle. These appearances are not unfrequently accompanied by habitual incontinence of the fæces.

When a medical man is called upon to examine such a case, and all or the greater portion of these symptoms are present, his opinion may be pretty well made up as to the criminality of the individual.

SYMPTOMS IN THE ACTIVE AGENT.—As to habitual *active* participation in the abomination, French writers assert that a thin-pointed penis, which is as it were twisted on itself, with an elongated compressed glans, is an almost infallible symptom of guilt.

As to this I have grave doubt. Experience leads me to believe that these variations in the shape of the male organ are often natural and congenital. Even if the intromittent organ, while in a state of quiescence, is of the shape described, no medical man can say what exact form it will assume when in a condition of erection, in which the change, if change there be, would take place. Although I place great dependence on the statements of the French medical legists, who tell us that these appearances are noticed in men addicted to this filthy crime, I still think they may have been deceived, and should not rely much on these variations in the shape of the penis.* Indeed I hope for the credit of my country that habitual offenders are rare in England.

Continental writers would likewise lead us to look with great suspicion on the various affections of the rectum, such as rhagades,

* I have lately submitted these statements of the French authorities to a medical man of eminence, who has long practised in different parts of the East, where these practices are supposed to be more common than in Europe. He quite coincides with me in thinking that habitual *active* participators in the crime do not present this peculiar shape of the penis. He says, however, that he has known cases of persons not being able to get into their saddle from having been the *passive* agents—at least this was the assignable cause. The same authority tells me that in Eastern countries, the *passive* agent is alone looked upon as a degraded being. He adds, The *active* participator is often a man of high position.

fissures, hæmorrhoids, excoriations, ulcers, and discharges. These they give, as a list of appearances characteristic of the violence done to the part in the commission of the unnatural offence. Now, without denying that some of these affections may so be produced, I should hesitate before relying much on these symptoms. I have met with all these affections in so many men and women where there was no reason to suspect any criminal act, that I cannot myself place much dependence on them.

I believe, moreover, that the most depraved and determined culprits are not often brought to justice—nor do they often suffer from venereal affections. It is the young, thoughtless schoolboy—in his first essay in vice—who becomes infected. The hoary sinner loaded with all iniquity, although his naturally strong constitution is prematurely wasted by every kind of debauchery, escapes. Yet, there are those who affirm "*that syphilis is inflicted by the Almighty to act as a restraint upon the indulgence of evil passions.*" (See p. 37.)

However this may be, it is the fact that old sinners evade the infliction, while the young, knowing little or nothing of its sad consequences, suffer miserably. These opinions have been remarkably corroborated by my visits to the continental hospitals and prisons, where I have been often struck by the rarity of chancres on the lips and mouths of women, although credibly informed that the depraved creatures have exposed themselves to infection in this vile way. Knowing the consequences of infection, they become good judges of the sanitary condition of their paramours.

These abnormally situated chancres are only too common, but are usually found in novices who are merely commencing their career of vice. The old debauchee is seldom or never affected by the direct consequences of his practices. I do not mean that a life of debauchery can be led with impunity. The most cursory observation is sufficient to show that the frequent and long-continued indulgence of sensual pleasures gives an unmistakable appearance, and leaves impressions that all the art in the world cannot remove—depraved tastes and revolting crimes deform the outer as well as the inner man. But venereal disease is not the affection these men suffer from.

I have noted some of the characteristics of this class of men in my work "On the Reproductive Organs":—

"When a young man, without any redeeming qualities, has gone through a career of debauchery, when his adult age is but a new lease of similar associations, the necessity for additional excitement appears to goad him on. Fictitious desires increase, until it is impossible to say where shall be his *acmé* of debauchery, or what devices may be invented by those in his pay 'to minister to a mind diseased,' particularly when such a pampered, ill-directed, unrestrained will is accompanied by unlimited wealth. For him, youth, innocence, and beauty soon cease to have attraction. Well has it been said of him, that 'the beast has destroyed the man.' Variety may for a time satisfy or stimulate his failing powers, but will not long suffice. Local stimulants are tried, and, after a short repetition, they also fail. As a last resource, unnatural excitement is brought to bear, and now public decency is forgotten, and we probably find the first check

to the lust of the opulent satyr, is his finding himself the hero of some filthy police case—then, may be, a convict or a voluntary exile ; and the nine days' wonder to the public is pronounced by the gossips a ' very sad thing for his family.'

" When as schoolboys we were accustomed to laugh at those fables of grotesque garden monsters in semi-human form, which figure in pictures by the ancient masters and on the handles of our urns and vases, we were hardly cognisant that these were but the antitypes of the fully draped satyrs who so notoriously affect the seclusion and the shade of the parks and gardens in modern cities. I question if a prison is the proper place for such debased individuals. As far as I have noticed their organization, I should say an uncontrolled giving way to the sexual passion has debased a frame never very strong. A constant drain on the nervous power has produced an effect which renders its subject indifferent to consequences, provided his all-absorbing pursuit (namely, ministering to the excitement of his sexual passion) can be indulged in. Doubtless, in many instances, the brain has become affected, particularly when there exists a strong hereditary tendency to disease. This, together with deficiency of occupation, has caused many of these victims to their own feelings to make the pandering to their own desires the master occupation of life, and every sensuality that their imagination can devise is indulged in. The medical man would feel hardly justified in certifying their fitness for a lunatic asylum, as in all other respects their life is irreproachable. Observing, as these patients do, all the other usual *convenances* of society, there is yet a something about them which marks the man given up to the most debasing pursuits. It is an error, however, to suppose they suffer from venereal affections. These old debauchees know too well the parties they have to do with, and every precaution is taken to avoid the consequences. They are the living and suffering spectres whom, as some clever writer has observed, ' Death seems to forget to strike, because he believes them already in the tomb.'

" I very much question, with their disordered brains, if the fear of punishment will deter such men from crime. These satyrs are so morbidly constituted, that the very chance of exposure seems to add a last incentive to their debased sensations. Has it ever occurred to others as it has to me, that by no other cause than this morbid stimulus can we explain why these rich old debauchees should choose places of public resort for their airing-grounds, when all that is there performed could, by the aid of money and existing agencies, be done in secret ? But it would seem as if acting their part in secret had lost its charm : the chance of evading the public laws appears the novelty. Hence the risk—consequently the detection ; and thus it is that the public become aware of the practices of those whose *penchants* have long been known to the police. It is a form of aberration of intellect to which libertinage is subject ; and I have drawn the picture here to show to what extent unrestrained recourse to sexual excitement will lead. Let it be a warning to those who with active imaginations commence a course of dissipation, and let them not imagine that at a certain point they can stop ;—the *causes célèbres* of police-courts show that men of great abilities and position have descended little by

little into this condition, to the disgrace of themselves and reprobation of their families.”*

The duties of the medical man may, however, extend to defending the innocent from charges that the most degraded class of men bring against the wealthy. It appears, as I have mentioned before, that organized plans have been laid in foreign cities to catch the unwary, and large annuities have been wrung from Englishmen under the threat, that if the money was not paid, an accusation of unnatural crimes would be brought against them. In many of these cases medical testimony is not required. But in others, I believe an innocent man has been often convicted on insufficient evidence, more especially if the accuser should have acquired the information that the defendant labours under any affection of the rectum.

In all these cases, the value of negative evidence which a medical man may be able to give is very great. As I have shown in a preceding page, great importance has been attached to the funnel-shaped appearance of the rectum. This, certainly, may be noticed in the habitual criminal, but it is by no means an invariable accompaniment of the crime, and, when present alone, may lead to a wrong inference. In a case lately brought under my notice where there was every reason to suppose the offence had been committed only a few times, no such appearance could be made out.

In another, which I saw with Dr. Semple, we particularly looked for this peculiar malformation; but the appearance of the rectum differed in no respect from that of any other female.

Those who have dissected phthisical patients, must be likewise aware that this infundibuliform appearance will be often found, as it depends upon the absorption of the fat. An inflammatory affection also may cause a swelling of the parts around the anus, and give the opening a funnel-shaped appearance. Hence, then, we infer that the crime may have been committed without this pretended sign being present; and if it does exist, it is not always certain that the crime has been perpetrated. The reader will therefore appreciate the value of such a symptom.

The colour of the discharge, where there is one, has been cited as assisting the diagnosis; but taken alone, this is of no use, for it does not give the surgeon any information as to the cause.

In simple blennorrhagia of the rectum, inoculation affords no assistance. Provided chancres be present, and inoculation produces the characteristic pustule, the case assumes a different aspect, particularly if chancre does not exist on any other part of the sexual organs; but if chancres exist on the external organs of the female, there is nothing to prevent the belief that the virus may have been communicated to and produced the affection in the rectum. This is very improbable, but a prisoner should have the benefit of the doubt.

The habits of the patient, or the history of the complaint, will seldom aid the diagnosis, as in judicial inquiries an acknowledgment of the cause of the disease is not likely to be made.

In fine, when chancre is not present in the anus or rectum alone, there is no one *unequivocal* sign that the complaint which the surgeon

* Acton on the Reproductive Organs, p. 104.

is called to pronounce upon, depends on a disease contracted in unnatural connexion. There is, however, a circumstance on which M. Ricord lays great stress; we refer to a rent or tearing of the margin opposite the *coccyx* and *perinæum*, which he has never found in persons unaccustomed to the crime. He further states, when this condition has been observed, that the patients, on being pressed, have confessed the manner in which the disease had been contracted.

Englishmen who travel abroad, and foreigners visiting our hospitals, return to their homes with extraordinary tales on the respective depravity of each other's country. No doubt can exist that the neglect in which the poor prostitute is left, and the want of hospital accommodation in London, contribute much to the immense prevalence of condylomatous ulceration about the anus in these women. Foreigners noticing these appearances in our *foul* wards go away fully convinced that unnatural crimes are very common in London. A greater error than this cannot occur, and I mention it because I have heard the subject publicly alluded to on the Continent on more than one occasion; and I feel confident that were prostitutes taken the same care of in London as on the Continent, these accusations would cease to have any apparent foundation.

To return, however, to the more immediate subject of this section. I may mention that blennorrhagia of the rectum is a very uncommon affection, either in Paris or London, still it is every now and then seen, and is characterized by the following

SYMPTOMS.—Pain and difficulty in going to stool usually accompany the disease; nevertheless, such symptoms exist equally in hæmorrhoids and other affections of the rectum. A discharge from the gut takes place, resembling that from the urethra, and this, if it has been neglected, excoriates the whole of the surrounding parts, which become intensely painful, particularly when the patient goes to stool. The lesions of the intestines may be similar to those we described in speaking of the vagina, and the pain is very often intense in consequence of the fæcal matter passing over the excoriated and inflamed gut, thus forming a severe complication; chancres may occur, which if accompanied, as they sometimes are, by a spasmodic action of the intestine, render defæcation very difficult, or even impossible.

The disease may assume either a chronic or acute character. When acute, the circumstances and complications render it very severe; when it takes on the chronic form, the position and difficulty of local treatment render the cure very tedious. *Buboes* seldom follow, but abscess at the margin of the anus is not infrequent; it does not, however, necessarily form a communication with the intestine, though fissures of the rectum may frequently result.

The affection is usually seated just within the sphincter, and does not extend beyond the second curvature of the rectum.

The **CAUSE** is, as we have stated above, the effect of direct contact of the blennorrhagic secretion; it cannot be produced by swallowing the secretion, as some authors have pretended. The other general causes of blennorrhagia might give rise to the disease, but seldom do so.

DIAGNOSIS.—This is by no means easy, for we occasionally see

blennorrhoid discharges from the rectum, and to distinguish such from blennorrhagia is usually impossible.

PROGNOSIS.—This must be always unfavourable, as, during the acute stage, the passage of the *feces irritates* the membrane, and may give rise to abscesses. In the chronic stage, if the disease has reached the deep parts of the rectum, we can have no hopes of speedily curing it, as it is difficult to apply local treatment.

TREATMENT.—The first indication we have to fulfil, is to empty the rectum, and to prevent constipation as much as possible ; this is best done by lavements. When, however, fissures of the rectum exist, the introduction of the clyster pipe is difficult, and should not be continued ; laxatives only should be used. Cubebs and copaiba are not only useless but highly prejudicial, as they tend to irritate the rectum, and have no effect in checking the discharge.

The direct means consist in keeping the parts perfectly clean, in employing injections of the solution of diacetate of lead $\mathfrak{z}\text{j}$, to the ounce of water, and in some cases advantage may be derived from the use of the tent.

SECTION IV.

BLENNORRHAGIA OF THE MOUTH, NOSE, AND EARS.

M. RICORD, in his immense practice, has never seen any disease or discharge which could be classed under this head ; he is therefore disposed to treat such descriptions as fabulous, and to attribute them to simple catarrhal affections.

OZÆNA.

Since the last edition of this book was published, I have met with some cases that I think deserve some record here.

During the summer of 1851, a young clergyman wrote to consult me. He stated that he was troubled with frequent seminal emissions, that he was getting very weak, and that, in his own words "his debility arose from the semen and spinal marrow being emitted by the nostrils." On receiving this letter, I set him down as one of those fanciful patients, many of whom I describe under the chapter on Syphilophobia. In due course my patient paid me a visit, but I found that in this case he was indeed a sad sufferer, and no pretender, although I could not agree with him in the explanation of his ailment. The right nostril discharged a profuse secretion, similar in colour and consistence to that of gonorrhœa. On examining the nostril the membrane was red and tender. On closing the opposite nostril and mouth, air would scarcely pass through the affected nostril either in expiration or inspiration. I could not detect any disease of the bone (the discharge was not *foetid*), nor could I discover a polypus. I ordered a solution of zinc and tannin to be injected into the nostril, and the patient improved, but I have never heard the result of the case, as his stay in London was necessarily short. He could not assign any cause for the outbreak of the discharge. He stated that it com-

menced three weeks before consulting me. He was a highly sensitive and nervous subject.

Some few years ago I attended an official connected with one of our metropolitan railways, who suffered from a profuse serous discharge from the nostril. He was a tall, healthy-looking man, and not apparently hypochondriacal. He was himself, however, fully convinced that the affection was a syphilitic one.

The professors at the Royal Veterinary College have often shown me purulent discharges flowing from the nostrils of horses. They seem to consider them simply as the result of chronic inflammation set up within the various sinuses within the skull, and causing thickening of the lining mucous membrane. Professor Spooner says he has seen it arise from a granular condition of the membrane, which had become four times as thick as usual, and poured out an abundant secretion, which flowed out if the horse held its head down, but at other times accumulated and became very offensive. This affection I was told began in the mucous membrane, but might subsequently attack the bones. So obstinate is the affection and so difficult to reach, that at the college the treatment in the advanced stages consists in trephining the facial sinuses, washing out the membrane with warm water, and injecting the affected parts with sulphate of copper and zinc in the proportions of a drachm of the mineral to a pint of water, or with solutions of nitrate of silver. A seton is often passed from the facial to the maxillary sinus to prevent the opening closing up too rapidly.

These affections are readily distinguished from glanders. In the latter affection, there is ulceration of the nostrils and nasal mucous membrane. The discharge is not foetid but contagious. The former, the veterinary professors do not consider contagious; but they may become very foetid. Very lately a horse affected in this way, snorted some of the secretion into the eye of a student who was examining him. The young man's eye was painful for some time, but no further mischief resulted.

In the UMBILICUS, and in the FOLD OF THE GROIN, discharges may appear as the consequence of dirt or the development of mucous tubercles. The treatment must of course depend on general principles and on the cause of the affection.

CHAPTER V.

NON-SPECIFIC AFFECTIONS FOLLOWING
SEXUAL INTERCOURSE.

BEFORE concluding what I have to say upon the first part of this work (composed as it is of non-specific diseases, and which has hitherto been principally confined to a description of blennorrhagia and its consequences in both sexes), a few pages must be devoted in the present chapter to the non-specific affections which come under the general term—venereal diseases, and which must be now described to make this work anything like a complete epitome of venereal affections. Under this group must be classed *Vegetations*—*Herpes Præputialis*—*Eczema*—and *Excoriations*, which I shall successively describe in the following sections.

SECTION I.

WARTS, OR VEGETATIONS.

Under the general term of non-specific affections, I place vegetations, which, though not necessarily, are frequently a consequence of sexual intercourse, and must therefore be here considered. Vegetations are generally designated by the terms warts, cauliflower excrescences, cocks'-combs, &c.

PATHOLOGY.—In colour, vegetations differ considerably; sometimes they are of a very vivid red or scarlet hue; this happens particularly when they are seated on the glans penis, at the entrance of the urethra in the male or female, on the inner margin of a narrow prepuce, and, generally speaking, when they are not constantly exposed to the air, as may be well seen in Plate 1. Fig. 2. When seated on the skin they are much paler, and by exposure become even quite black.

Their consistence and sensibility differ considerably; they may be quite horny, very little if at all sensible, and quite dry; or they may be moist, secreting a serous and offensive fluid, flaccid, and sensitive to the ordinary stimuli.

Sometimes they are attached to the skin by a sort of peduncle; others have a broad base, and are flattened. In number and size the same variety occurs; we often meet with one or two very small and pointed; in other instances, the entire male or female organs may be thickly covered with them. They are more frequently situated on the mucous membrane than on the skin, although they are occasionally met with on the thighs. And when found on the skin, it is gene-

rally on those parts which are closely allied to mucous membrane. Their growth there depends apparently on the little pressure exercised on them and the moisture which they can imbibe; for if pressure be made, and if artificial means be employed to keep the parts dry, their growth is retarded.

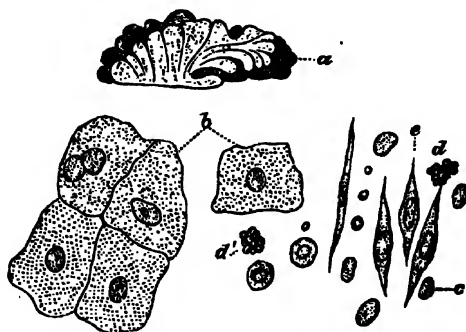
Mr. Paget has kindly furnished me with the following account of the microscopic structure of these bodies :—

“The warts examined were specimens of ordinary appearance from the glans penis and the lining of the prepuce. They were narrow-stemmed, and on their broad and flat expanded parts bore a crowd of small and often flattened conical processes. In all the cases they were of recent growth, and appeared very vascular.

“They consisted of two principal substances, namely, an outer epithelial covering, and an inner vascular tissue, like certain forms of rudimental cellular tissue. The epithelial covering was composed of numerous layers of tessellated, scale-like cells, resembling, both in structure and arrangement, the epithelial cells covering the glans and inner surface of the prepuce. The epithelium thus extended over the whole wart formed fully half its substance.

“The vascular substance of the warts was continuous with that of the thin dermal tissue of the glans or prepuce, and was connected with the subjacent looser cellular tissue. It consisted of a pale and obscurely filamentous blastema, in which were imbedded very numerous bodies, like nuclei, oval, shining, dark edged, well defined, made more distinct by acetic acid, and having no nucleoli. It had all the characters of such nucleated blastema as is found in the rudimental state of many normal examples of fibro-cellular tissue.”

This account, I may mention, is in most particulars confirmatory of that given by Lebert, Bennet, and Simon; Dr. T. W. Griffith has also favoured me with the following sketch and description of the elements which he found in vegetations :—



MICROSCOPIC STRUCTURE OF WARTS.

Magnified 300 diameters.

a. Transverse section of a mass of warts, slightly magnified; *b.* Scales of pavement epithelium, most abundant at the surface of the warts; *c.* Free nuclei; *d.* Globules of fatty matter; *e.* Fibro-plastic cells.

The fibro-plastic cells and free nuclei are most numerous towards the base of the warts. The free, fatty globules probably result from the fatty degeneration of the epithelial cells, which may, perhaps, account for the brittleness of the extremities of the parts. All the epithelial cells contain fatty matter to some extent.

Warts are plentifully supplied with blood-vessels, bleeding freely when cut ; their sensibility differs greatly. In some cases vegetations are nearly destitute of sensation ; when they have been much irritated, they become exceedingly sensitive, and the secretion they give rise to, seems to increase that sensibility. Pearson states that in negroes the hard wart is black.

The CAUSES appear to arise from irritation ; some persons believe them to be the consequence of venereal disease, and pretend to speak of syphilitic vegetations as distinguished from others. Observation leads me to the following conclusions : Any secretion which will occasion irritation of a surface for a prolonged period, may produce vegetations. They may be often seen in boys and adults affected with natural phymosis, or who fail to pay proper attention to cleanliness ; in such cases, it is the acrid secretion of the glandulæ odoriferæ which produces the disease, for they may occur where connexion has never been indulged in. Sir A. Cooper, in his valuable Lectures on Surgery, mentions two cases, which he thinks prove that the secretion of warts is contagious, but he does not think that the blood of these bodies can become the infectious agent. I have met with similar cases, still I am not prepared to say that the matter they secrete possesses any peculiar property, acting otherwise than as a simple irritant, and as such alone sufficient to produce warts.

In females warts depend upon gonorrhœa or irritating discharges. The secretion of chancres often produces them, not, I believe, in virtue of any specific action, but from its irritating qualities, and modern authors have ceased to consider them a secondary symptom. It is of great importance in medical jurisprudence that these points should be properly appreciated. I may here mention an instance. A late *interne* at the Hospital St. Louis, was shown a child with vegetations completely encircling the genital organs. These he instantly pronounced to be syphilitic ; and the mother immediately suspected an old man who lived in the same house with her, and who was in the habit of playing with the child. The answers of the child appeared to corroborate these suspicions, or they were (as often happens) tortured into an acknowledgment. The authorities were apprised, but did not think it necessary to take any measures. I examined the child, and found that the vegetations existed in great numbers, of a dark and horny consistence ; there was a considerable quantity of serous discharge from the vagina. The child was puny and lymphatic, but I could detect no marks of violence on its person. These circumstances induced me to think the *interne* had come rather hastily to a conclusion on the nature of the vegetations. Their pale, horny, dark character proved that the warts had existed a long time, notwithstanding the statement of the mother, who seemed determined at all risks to tax the old man with rape. The discharge from the vagina, as I assured the *interne*, was often present in scrofulous children. It existed in this instance, and its serous character showed that it did not depend upon recent infection. Now these appearances did not tally with the commission of rape, or the idea of infection contracted a few days before. I believed the man innocent ; and I mention the case here, as the circumstances which attended it are peculiar, and should put surgeons on their guard.

I must not quit the affection in the female without calling the attention of my readers to a variety of the wart which is occasionally found at the orifice of the urethra. The last case I saw of the kind was in consultation with Sir B. Brodie. It occurred in a young married lady with auburn hair. In size the growth represented a raspberry, as well in its granular appearance as in its colour; it was excessively sensitive, and sexual intercourse, as well as micturition, caused great pain; there was some little discharge from the urethra. In this case the little tumour was partly within and partly on the edge of the meatus.

COMPLICATIONS.—Vegetations may exist alone, or become complicated with a variety of other affections: in the female we often find discharges which produce, keep up, and aggravate the complaint. Excoriation of the surrounding tissues is often a complication.

I was attending (in May, 1856) a medical student who presented a complication that I have never before seen. This patient, a few weeks before, came to me with a phagedenic sore on the upper and outer side of the penis, that communicated with the urethra. On drawing back the foreskin large warty growths were noticed, and from discharge issuing from this, it was shown that these commenced within the urethra. The phagedena rapidly got well under appropriate treatment, but I found the base of the phagedenic sore was occupied by warts. These were burnt, but they grew again, with discharge from the urethra, and I came to the conclusion that, in this instance, the origin of the disease depended upon warts commencing within the urethra, two inches from the meatus, making their way externally by pressure, and simulating phagedena in a strumous constitution; so I applied the pulv. sabinæ cum ærug. to remove the warts. (See p. 253.)

Ulcerations both of a simple and specific nature frequently attend the complaint, and render it more difficult of cure. But by far the most frequent complication in the London hospitals consists in condylomata, and hence these two affections are often confounded together, and attributed to the same cause. In the female, the situation of vegetations often gives rise to a complication, particularly when they are of a very vascular kind and occupy the meatus, causing that affection which has been described by Sir C. M. Clarke and Sir B. Brodie. In the male, vegetations co-exist with *balanitis*, *chancres*, *paraphymosis*, and *phymosis*, complications which are often severer than the original affection, and which it is necessary to remedy previous to treating the vegetations.

The DIAGNOSIS of vegetations is generally easy; there is, however, one affection with which they may be confounded; I allude to *condylomata*. The practised eye will, in such cases, however, rarely be deceived. In the former affection the bodies are pedunculated, the granules small and covered with epidermis, and their colour is florid.

In the latter affection the base of the condylomata is large, the granular patch is flat, and covered with a whitish or yellow secretion, as seen in Plate VII., rarely occurring without other traces of secondary symptoms, probably the patchy excoriation of the tonsils, or a papular eruption on the body.

When vegetations and condylomata occur together, the local characters I have above mentioned aid the diagnosis.*

The PROGNOSIS is favourable, but the patient should be made aware that, when destroyed, vegetations are very liable to recur, more especially if great precautions be not taken to insure cleanliness and dryness. If not removed, however, they may create great local irritation, and produce very intractable sores, although possessing nothing specific. In some few cases I have witnessed—particularly when vegetations are very extensive—one crop succeeds another almost before the last is destroyed. The disease is hydra-headed; but under proper treatment it need not generally be ineradicable.

TREATMENT.—When vegetations are few in number, it is only necessary to remove the cause which keeps up the irritation, and they will disappear of themselves. Ablution with tepid water, or an astringent wash, will often suffice, provided dry lint be used to prevent the vegetations coming in contact with one another. Thus treated, they shrivel up, soon fall away, and are not reproduced. In slight cases like these, powder of the oxide of zinc may be employed by means of a puff-ball: the advantage of this over other powders, is that it undergoes no change, and does not become rancid. For the first day or two after employing the powder, and before dusting over the vegetations afresh, it will be well to soak and dry them, particularly if the secretion be abundant. If these simple means fail, and if the warts be of a dirty white colour, not florid, I desire the patient to apply twice a day a pinch of a powder, composed as in the following prescription:—

R P. Sabinæ
P. Æruginis aa ʒss.
M. ft. Pulv.

and separating the granules, allow the powder to fill up the interstices, and then further keep the parts dry by means of cotton wool. On soaking the part in warm water, within the next day or two, the little dry vegetations may be easily rubbed off.

In following out this treatment, it will be necessary in the female to use astringent injections, as well as to plug the vagina with cotton or lint. It is still better to treat the affection that gives rise to the discharge by appropriate local remedies. If called on to treat a man who has a long prepuce, we must employ cotton wool; for it is in vain to cure, or attempt to cure vegetations, unless we can protect the parts from moisture.

When the vegetations are very red, and the parts around much excoriated and inflamed, I should recommend the surgeon to apply a saturated solution of opium to the warts, and keep them constantly damp with the solution, by means of rags and oil silk. The solution may be made in the following proportion.

R Pulv. Opii ʒss.
Aque Oj.

Coque ad ʒ xij.

Or when the irritation has somewhat subsided, powdered opium may be sprinkled over the parts, and the dry treatment had recourse to.

* See the chapter upon condylomata in the Second Part of this work.

Excision with the curved scissors may be resorted to at once, when there are only two or three little masses, particularly if they are pedunculated, but patients rebel against the employment of the cold steel, and prefer escharotics; besides, there is great liability to the recurrence of the disease after excision.

If the warts are dry, flat, and hard, the treatment above mentioned does not answer, and I employ escharotics. The nitrate of silver is impotent in these cases, and I have long since laid it aside as useless. I now usually employ the Vienna paste composed of five parts of caustic lime and six of caustic potash. This is kept ready mixed as a powder in well-stoppered bottles, and when required for use a small quantity of the powder is mixed on a flat surface with sufficient eau de Cologne or spirit to form a paste. This paste is then applied to the warts by means of an ivory modeller's tool, care being taken that this potent escharotic shall only touch the wart, and to avoid this contact the wart may be surrounded with cotton wool. In a few seconds the wart is destroyed, and on applying a little vinegar the further action of the caustic is stayed, and in a short time the black eschar falls off. The only further precaution to be taken is to keep the surrounding parts dry. If the mass of warts be very large and deep, the first layer of paste may, as soon as it has fully acted, be wiped away with lint, and replaced by another supply, until the whole mass is removed. This is a somewhat painful but effectual process, and chloroform or opium may be previously given. After their removal, the greatest cleanliness must be enjoined, and as the ulcerations heal, they should be washed with tannic acid and water in the proportion of two grains to the ʒj , and then dried. The obstinacy of these affections in again and again reappearing is most tiresome in some cases, and depends I suppose upon our not extirpating the roots. I should, moreover mention that when we burn very deeply, hoping effectually to destroy the roots, we may produce very ugly and intractable ulcers seated on hardened skin. This scirrhus foundation formerly used to make me dread degeneration into cancerous sores; but I find that full doses of iodide of potash will tend to remove the thickening, and ultimately the cure will be effected, and may be expedited by soaking the warts in pure goulard extract, or in a saturated solution of alum; but the patience of both surgeon and patient will often be sorely tried.

I have never found any general treatment beneficial in the cure of vegetations, although I have tried many of those that have been recommended; for instance, magnesia and iron. I should advise the surgeon to attend rather to the local treatment.

SECTION II.

HERPES PRÆPUTIALIS.

THIS complaint has been arranged by Willan and Bateman under the head of vesicular diseases. Seen at the earliest stages, no doubt can exist that the eruption appears as a cluster of vesicles, but as the

fluid in the vesicles soon loses its transparency, becoming more or less purulent ; the surgeon who loses the opportunity of seeing it in this stage may be puzzled to know what it is. The reader may form a very good notion of the appearance of the disease from Plate I. Fig. 3.

Herpes præputialis commences with some itching of the part ; at first mere redness is observed, soon followed by a patch of tiny vesicles, which become filled with a transparent liquid. These vesicles are about the size of a pin's head, and there are usually five or six clustered together ; they generally appear on that part of the prepuce where it loses its character of skin, and assumes that of mucous membrane. In many cases the complaint is confined to the prepuce ; in other instances, patches similar in character are to be met with on other parts of the body. When the vesicles have reached the size of pins' heads, the itching increases, and they are broken, either by the friction of the trousers, or the nails of the patient ; the secretion then becomes yellow, and forms a crust, which sufficiently marks the character of the complaint. When the vesicles are not broken, the secretion assumes a semi-purulent character ; they shrivel, and the fluid escaping, forms a yellow pellicle on the surface, surrounded by a red areola. If irritated, the whole may coalesce into an ulcer, which is seen on removing the scab ; but most frequently the secretion dries, and the scab falls off in a few days, leaving a red but entire surface below.

CAUSE.—This can generally be traced to some derangement of stomach, or indiscretion in diet. Some persons are very liable to the complaint, and are unable to eat certain sorts of food, or to take late suppers, without suffering the next morning from the affection. In the majority of cases, knowing the cause, men pay little attention to it ; but if promiscuous intercourse has been indulged in, they necessarily get alarmed, and apply to their surgeon, who is generally enabled to distinguish the complaint from chancre.

DIAGNOSIS.—When seen in the first stage, as a patch of vesicles, no doubt can exist even if it follows connexion. Syphilis never puts on this form ; but when the secretion has become purulent, it is difficult to distinguish the complaint from a crop of follicular chancres, such as is represented in Plate V. Fig. 4. We must here depend for accurate diagnosis upon the history, the previous existence of a patch of vesicles, and the predisposition of the patient. In all instances, however, the case must be carefully watched, and in twenty-four hours the surgeon will be able to form a decided opinion. This is the more necessary, as the treatment proper for the one complaint is highly injurious to the others. It is very difficult to decide on the nature of the case when a crust is formed over the vesicles, or when an ulcer has been produced ; and it is only by inoculation, or by the course of the disease in the next twenty-four hours, that the surgeon can form an absolute diagnosis. Irritating applications will soon produce a foul unhealthy sore.

TREATMENT.—The first object in view is to allay the itching, which is often very annoying. This is best done by bathing the part in bran

and water, and prescribing a bath every other day, in order to remove any source of irritation of the skin. The patient should take a slight aperient, while the general health should be kept up by slight tonics and alkalies, and the diet should be strictly attended to. Generally, immediate relief is obtained by water-dressing with bran water or goulard water. The recently made unguentum zinci may be employed, particularly when the surface is covered with little scales, care being taken, however, to soak the part well night and morning, so that the ointment may not become rancid. This disease usually gets well in a day or two. If it does not, either the treatment employed has been improper, or there is fear that chancre complicates the case; for the treatment of the latter complaint I must refer my readers to the Second Part of this work.

SECTION III.

ECZEMA.

THE surgeon is occasionally consulted on account of a severe affection of the genital organs which pathologists call eczema. This disease is generally spoken of only in treatises on skin diseases; however, as it may arise as a consequence of sexual intercourse, I have thought proper to allude to it; a drawing of the affection will be found in Plate I. Fig. 4.

CAUSES.—Eczema can generally be traced to the application of some irritating substance to the skin. In the cases which we are about to treat of, the blennorrhagic discharge is the usual exciting cause, together with inattention to cleanliness: hence we very frequently witness the affection in prostitutes. In men, however, who work in a business where much powder or dust is disengaged, this affection of the genital organs is not uncommon, and of course quite independent of any venereal complaint. The surgeon should not forget that mere friction of the trousers will produce it. By itself it is no sign of venereal disease. I have found it most frequently in persons who have red or auburn hair; and in stout rather than in spare individuals.

SYMPTOMS.—Eczema is characterized at its commencement by a feeling of itching, heat, and redness; the parts become swollen, and these symptoms are followed by an eruption of the minutest vesicles scattered over the surface; when scratched, a serous fluid exudes, forming little scales on the skin with cracks between them, and increasing the irritation. The disease may assume the chronic form; the drawing was taken from one in this condition. The skin is red and swollen; the surface covered with the secretion above mentioned, which is hardened by exposure, and crevices are seen running between the lamellæ: from these issues, at first, a clear, and in the more severe cases a sero-purulent secretion, giving rise to larger and firmer scales, and the disease is then called *eczema impetiginoides*.

The **DIAGNOSIS** is generally easy, and does not require specification.

The PROGNOSIS, in simple cases, is favourable, but in the severer forms no prospect of an early or speedy cure can be given, as this affection is most obstinate.

TREATMENT.—Great attention to cleanliness is frequently sufficient to cure the patient, at the same time that all exciting causes are carefully avoided. In the more advanced stages, local bleeding will be called for, and some emollient application, such as bran-water, goulard-water, or poultices, particularly those made of potato-starch. Linseed-meal, from its readiness to become rancid, often exaggerates the complaint.

In chronic forms, when all irritation has ceased, it may be found advantageous to stimulate the part by rubbing it with nitrate of silver, employing dry lint to prevent friction.

The following case is of very great importance, as showing that eczema may be mistaken for syphilis. I have seen several similar instances.

Aggravated case of Eczema Rubrum on the Genital Organs, mistaken for Syphilis, November 24, 1849 :—

A child, nine weeks old, was brought to me by its mother, in great alarm, in consequence of having been told by a medical man that the complaint was venereal. The child was a fine stout boy, but very fretful. The eyebrows presented distinct vesicles of eczema. The inside of the mouth and lips free from disease, but just at their margins, and extending for the space of an inch and a half, completely encircling the mouth, the skin presented a dusky hue, and appeared covered with a thin, shining, dry pellicle, like a recent blistered surface, interrupted with cracks and crevices. There was no exudation, except beneath the chin, where the cap-string had irritated the surface; and here a serous-looking fluid exuded, and excoriated the surrounding parts. Beyond this, distinct and separate clusters of vesicles could be seen, presenting a dusky hue. On the arms and chest a few small patches of these vesicles were apparent. The disease, however, seemed to have settled principally on the lower part of the abdomen, scrotum, thighs, and nates. The entire surface of these parts presented a shining, but dark or dusky-red surface, as if covered with a thin pellicle, similar in appearance to that found on a healing blistered surface. The temperature of the surface was much above that of the surrounding parts; no vesicles could be detected. This unhealthy-looking skin was creased and plaited, with a disposition to crack; in many places large thin flakes could be detached; every movement the child made appeared to cause great pain.

The mother states that her other two children are and have been quite healthy; her husband has never complained of illness; she has suckled her own child, which has never been out of her sight; has never nursed any other woman's infant. The child enjoyed good health until three weeks old; at this period it was seized with thrush; the throat became affected, and soon after an eruption appeared around the arms, which has gradually spread over the parts now affected. For some weeks the child was under the care of her usual medical attendant, and treated with powders and ointment; the

mother, finding the complaint getting worse, consulted another medical man, who, after looking at her boy, told her not to be offended, but her child had the venereal disease, and mercury was necessary for its cure. He prescribed a grey powder twice a day. The terror of the mother was, as may be supposed, great, when made acquainted with her child's complaint: for herself she could answer, and as to her husband's conduct she never had entertained the least suspicion. The medical man was no less positive, and further enjoined her not to suckle the infant, lest she should herself become infected; the friends in the meantime becoming alarmed, recommended her to take a third opinion.

On seeing the child I felt no hesitation in stating that it suffered under an aggravated form of *eczema rubrum*—a complaint which I more than once have seen mistaken for syphilitic disease; and as it presents several features of great interest, I have thought it advisable to publish it as illustrating the diagnosis of a most interesting class of infantile diseases, not usually dwelt on in books, yet leading to most lamentable consequences in practice. I presume the dusky colour of the skin, the obstinacy of the complaint, and the possibility of the father having been infected with syphilis in his youth, may have imposed on this practitioner, as it has done on others, who have characterized similar complaints as syphilitic. My own opinion was formed on the following data:—The general appearance of the child, strong and plump for its age, contra-indicated any syphilitic taint; in almost all cases, previous to secondary symptoms appearing, we find children fall away. Before syphilis has existed six weeks, the skin generally presents an earthy hue, and the infant is reduced to a skeleton. The dusky colour of the eruption on the child certainly might lead to the suspicion that the complaint was syphilitic in the minds of those who place much dependence on colour as a criterion of syphilitic eruption; but most modern writers agree in this test being very fallacious, as no recent eruption of a syphilitic character is copper-coloured, and many old and non-specific diseases of the skin take on a bluish or livid character. Lastly, the vesicular form of secondary symptoms is a very uncommon affection; those who have had the greatest opportunity of witnessing venereal diseases not having met with more than one, or at most two, instances of this form. The only affection, then, that this disease could be confounded with, would be that form of the complaint shown in Plate VII., but it will be seen that it there assumes a flattened, tuberculated form: in this instance no elevations could be seen or felt. The severity and duration of the disease equally bespeak the case to be one of *eczema rubrum*. That complaint is well known to be very rebellious to ordinary remedies, and the treatment appropriate for syphilis is useless, for the two diseases are entirely distinct.

In this case the principal treatment consisted in attempting to reduce the temperature of the part, and to apply locally a soothing application. I recommended the mother to place the child in a bran bath night and morning; to be careful not to employ soap, or dress the child in front of a fire; to keep fine linen rags, damp with Goulard's lotion, constantly to the child's nates and scrotum, re-applying them

as often as they became dry ; to protect the infant from catching cold, by enveloping it with flannel, so as to maintain the general temperature of the surface.

I am prepared to hear this treatment cavilled at as one fraught with danger, and the probability of inflammation attacking some internal organ. I can only say that where ordinary precautions are taken to exclude air, no apprehensions need be entertained. I have seen infants like the present very speedily cured, when all other means have failed, and in old people, much reduced, no ill consequences have followed, although, as in this instance, a considerable surface has been constantly kept wet.

All kinds of ointments or greasy applications are in such cases as these prejudicial ; they soothe the part for the moment, but seem then to increase the temperature, are liable to become rancid, and frequently occasion a relapse of the complaint.

As the child had taken three grey powders (its bowels, previously regular, having become relaxed) I did not order any physic, being determined to watch the effect of simple local treatment. The mother was desired to give the child the breast, as in its present condition it would be difficult to find any other person to suckle it, for fear of infection. I desired her, however, to live regularly, abstaining from cheese and raw vegetables, or anything that might disagree with the stomach.

Nov. 25.—On the next morning the mother came to me delighted ; her child had been much less fretful, and had slept for several hours after the bran-bath ; she had constantly kept the lotion applied by means of a damp handkerchief, completely enveloping the parts affected. The temperature of the skin had become natural, the dusky colour of the surface disappearing, and large portions of a thin pellicle peeling off. Motions continue still unhealthy ; to continue the same treatment.

27.—The skin is resuming its healthy structure ; here and there are a few fissures, from which a thin serous fluid exudes.

29.—All traces of the disease have disappeared, except red marks, which the creases, now rapidly healing, have left. Ordered to leave off the lotion, but to continue the bran-baths, night and morning ; the child's bowels have become quite regular.

SECTION IV.

EXCORIATIONS.

DEFINITION.—By the term excoriation, I here mean abrasion of the epidermis or epithelium, the result of sexual intercourse.

We meet, in practice, with some few individuals who cannot indulge in sexual intercourse without being subject to excoriations. It might be supposed that a particularly thin and delicate skin was the cause of this, but this seems by no means necessary. I have met with the affection in patients who on other parts of the body have a

thicker cuticle than usual, and yet are very subject to abrasions in connexion. Excoriations, however, are more commonly met with in persons who naturally have a long and narrow prepuce, and pay little attention to cleanliness.

The number and position of excoriations differ greatly, but it is in the neighbourhood of the frænum that they are most commonly seen, and they often occur upon the patches of the *glandulæ odoriferæ* at the base of the glans penis. They may rapidly heal, or, if neglected, ulcerations may follow, and be kept up by the secretions of the part. As far as physical characters go we are unable to distinguish these sores from chancres, to which they bear a strong resemblance in situation, size, &c., and consequently their diagnosis will be given in the second part of this work.

CAUSES.—Among my patients I have had frequent opportunities of examining the women who have caused these excoriations, and I have noticed that at the time they have often laboured under some uterine affection, and I therefore conclude that the irritating secretion may have something to do in inducing at one period, and not at another, these little doubtful sores which we call excoriations.

In other cases, any excess in connexion will at, or about the menstrual period, render the man more susceptible.

The treatment is the simplest possible. Washing the penis several times in the day with a little goulard water, and when dried, placing a small strip of dry lint between the glans and prepuce, will rapidly cause these excoriations to heal. If any one is rebellious, it may be slightly touched with caustic. The surgeon, to prevent a repetition of the annoyance, may recommend some astringent wash, and direct his patient to partially uncover the glans; by such means, together with strict attention to cleanliness, or washing the part daily with a little spirit, the abrasions of the skin will not reoccur, and the patient will be saved much annoyance and danger, as inoculation will of course take place very readily wherever there is abrasion of the surface.

If the excoriations do not heal readily, the surgeon may employ iron with great advantage. I usually employ the Ferri potass. tart. in the way recommended under the head of phagedenic chancres. Indeed, unhealthy excoriations usually depend upon the health of the individual being below par. It would be useless in this place to discuss the diagnosis of excoriation and simple chancre, since it will be fully treated of in another place. It should be remembered that it is often impossible for the first twenty-four hours to give a positive opinion, and in many instances the one may complicate the other, and the same connexion may have produced both, and the diagnosis, though very important, is often very difficult. A few days will, however, almost invariably enable the surgeon to give a positive opinion even in the most obscure and complicated cases.

SECTION V.

THE CRABS, THE CRAB-LOUSE, OR PEDICULUS PUBIS, MORE PROPERLY PHTHIRIUS INGUINALIS.

ALTHOUGH these insects may be transferred from one individual to another by long contact and by means of the clothes, still they are most commonly present in consequence of connexion. They therefore require some notice here.

They are *most frequently* found on and about the pubes, and generally attract the attention of the patient by the disagreeable itching which they produce. If a person suffering from crabs be examined, the insects will be observed in larger or smaller numbers on the skin, and among the hair, particularly of the pubes; but they wander up the abdomen into the whiskers, eye-brows and eye-lashes, down the thighs, and even as far back as the anus. They appear as flat black specks adhering firmly to the skin, from which it is difficult to remove them except by a pointed pair of forceps. That these insects should thus keep their hold is not surprising when we view them under a microscope, as they are provided with peculiar prehensile organs in the form of hooked claws that are very strikingly developed in the genus *Phthirius*,* the name by which they are known in scientific works.

Mr. Quekett mentioned to me a curious circumstance. Observation on the movements of these insects has taught him that they are unable to climb up and deposit their eggs on straight hairs, in consequence of the peculiar shape of their claws. Hence the fact probably that we do not find their ova on the head, but on the pubes, and as high up as the whiskers, in both which situations the hair is curled.

When placed on a white sheet of paper they somewhat resemble a crab in miniature. They are flat and about half the size of a pin's head. It is unnecessary for me here to describe the natural history of the insect. For practical purposes it should be remembered that they are very tenacious of life, and that hardly anything but mercurial preparations will destroy them. When thus killed they fall off, and are found in numbers on the sheets—a circumstance that the patient should be made acquainted with.

My readers are most probably aware that our officers in the Crimea suffered greatly from lice; but the variety we are now speaking of was almost unknown. The insect that infested the flannel shirts of our now well-dressed men was a kindred species, the *pediculus vestimenti*. Their broods, I am told, increased to an incredible extent, in consequence of means not being at hand to maintain cleanliness. Many a night's rest has been disturbed by the irritation produced by these insects, although the sufferer may have had the hardest day's work in the trenches before Sebastopol.

Their power of reproduction is something extraordinary. I was disposed to believe that, like some sorts of insects—aphides—no sooner

* The genus *Phthirius* is distinguished from *Pediculus* by the two fore legs having simple claws, the hind ones prehensile, whilst in *Pediculus* all the claws are prehensile.

did they come into existence, than they themselves gave birth to others of their kind. Küchenmeister states that in six days the young escape from the egg, and then are ready to lay eggs themselves at the age of eighteen days. A female lays 50 eggs in all, and Leuwenhoek, from some experiments made upon himself with two female lice, states that at the end of six days one of them had laid 50 eggs, the other 40. On opening the one that had laid 50 eggs, he found 50 more ova. Ten days later he found 25 insects of three sizes, from the other mother; some of these apparently were two days old, others one day; the rest had only just left the egg.

It must be borne in mind that we have not only to do with the insect, but with the nits which are its eggs. These are deposited on the hairs, and glued to them by a strong varnish,* which by chemists is called chitine, and resists the action of most substances. Sometimes we see these eggs arranged in a string or row on a hair, and so firmly attached that the hair may break rather than part from the egg. The egg under the microscope is a curious object; it is urn-shaped, furnished with a sort of lid which opens, and the young insect crawls out as soon as it is hatched. It is necessary therefore to continue to apply the destroying lotion until all the eggs have been hatched and the young insects killed as they appear, as it has no action whatever on the hard case of the egg.

THE TREATMENT.—In private practice I always prescribe a solution of corrosive sublimate, one or two grains to the ounce of distilled water; this lotion should be applied twice a day freely to the suspected parts by means of a piece of sponge and allowed to dry in, when the animals will die and fall away. Successive crops having to be destroyed, the patient should continue the lotion for a fortnight, and carefully observe if there be any nits left; if there are, there is no security against another invasion, so prolific are these insects. Ointments or powders are of no use; they produce dirt and marks which it is as well to avoid, for the idea of the presence of the insects themselves is bad enough. It would be well for the surgeon to examine closely if any animals or nits exist in parts at a distance. The very worst treatment of all is to shave the pubes; I had this strongly impressed on my memory by what happened soon after I commenced my studies. A schoolfellow came to me to cure him of crabs. I shaved the pubes, and applied to the parts from which I could not remove the hair, a strong solution of bichloride of mercury. Some of the lotion touched the shaved parts and excoriated the skin; and the agony my patient suffered made me determine that I would try no more experiments of that sort.

* It is important for the practical surgeon to know that this varnish is composed of *chitine*, a substance that is thus described by Dr. Griffith, in the "Micrographic Dictionary":—

"Chitine is the horny substance which gives firmness to the tegumentary system and other parts of the Crustacea, Arachnida, and Insects; probably also the lorica of the Rotatoria consists of it. It is left, when the above structures are exhausted, successively with alcohol, æther, water, acetic acid and alkalies, retaining the original form of the texture. It is dissolved by concentrated mineral acids, without the production of colour. It is not dissolved by solution of potash, even when boiling. It contains nitrogen."

SECTION VI.

VIOLENT ITCHING—PRURITUS.

HARDLY any affection can be more distressing than this ; and the surgeon is often at a loss to know how to cure it. In some instances no local cause can be discovered, and he must have recourse to general treatment. The local symptoms are often rather the effect of the nails wounding or irritating the skin than any eruption. Sometimes we find eczema and other skin affections, but usually the indications for treatment must be looked for in the general state of health of the patient. I know no better tonic than bitters combined with alkalies.

A very good formula is the following :—

R. Liquor Potass. ʒvj.
 T. Gent. Comp. ʒv. ʒij.
 M ft. Mist.

A dessert spoonful to be taken twice a day in a wine-glass full of water at eleven and four, together with some slightly alterative pill.

The hydrocyanic acid lotion in the proportion of a drachm of the dilute acid to two ounces of water will often allay the irritation ; ointments are generally highly objectionable. Of course if the source of the pruritus be irritation of the urethra, uterus, or rectum, or any other local cause, these remedies will not succeed, but we must have recourse to local treatment. The violet powder in some cases succeeds, in others potatoe-starch poultices or strong goulard lotion.

A

COMPLETE PRACTICAL TREATISE,
ETC. ETC.

PART II.
SYPHILIS.

PART II.

SYPHILIS.

INTRODUCTORY REMARKS.

As already stated at the commencement of this work,* “Venereal Diseases”—that is, diseases resulting from sexual intercourse—may be arranged under two heads, or great divisions, viz, *Non-specific* and *Specific*. The consideration of the first division has been completed in the foregoing pages.

The second great division, which we shall now proceed to describe, is composed of all those diseases included under the comprehensive term *SYPHILIS*.

DEFINITION.—Syphilis is a virulent and specific affection peculiar to man, and invariably arising from one special virus.

The syphilitic poison never—at least in the present day—arises spontaneously or sporadically, but can always be traced back to contagion from a previously existing virus. When brought into sufficiently close contact with the animal economy to infect it, it produces local effects called *primary symptoms* or *chancres*.

Syphilis or specific venereal disease invariably makes its first appearance under the form of chancre: though in the case of infants—the disease having been derived from the parents—the original chancre must be looked for, not in the child, but in the father or mother.† Chancre may be either a simple *soft* sore, or an *indurated* one.

* See page 3.

† To substantiate this fact M. Ricord collected among the in and out patients of his hospital, during the year 1856, records of 826 cases affected with the different symptoms of constitutional syphilis. They were thus arranged:—

Patients suffering from secondary symptoms . .	759
Do tertiary symptoms . . .	67

Total 826

In 815 of these 826 cases, a chancre was satisfactorily traced as the prelude to the constitutional infection.

On examination, out of the eleven remaining cases it appeared that two clearly depended upon hereditary syphilis. Three others were found to have been preceded by chancres on the anus, perinæum and scrotum, where they had been overlooked. A sixth had suffered from a chancre on the lip. In the last four instances a careful examination discovered the cicatrices of the sores. In the seventh case a narrow prepuce prevented M. Ricord substantiating the existence of chancre which may have had its seat in the urethra.

In two more instances, though neither chancre nor its cicatrix was discovered, it may have existed in the urethra, and all the circumstantial evidence led to that supposition.

In the two remaining cases the time that had elapsed since infection was sufficient

The former is, and remains, a purely local affection, and never infects the constitution. The latter, on the contrary (however slight its local manifestations may be), if left unchecked, is inevitably followed by constitutional affections, of which the manifestations are called *secondary symptoms*. The specific treatment required by the indurated form of chancre, is an additional reason why syphilis has been called a specific affection.

DERIVATION.—The term syphilis is derived, according to Fallopius and Swediaur, from *σύν*, with, and *φιλία*, love ; or, according to Bosquillon, from *σιφίλος*, *maimed or empty* ; other authors state that it is derived from *σῦς*, hog, and *φιλεῖν*, to love.*

ARRANGEMENT OF THE SUBJECT.—Modern authors have subdivided syphilis as above defined into three separate stages. This arrangement I shall follow, believing it the most natural, and having the additional advantage of placing the symptoms, as they successively arise, in a clear and methodical manner before the reader.

These separate stages are known as **PRIMARY, SECONDARY, and TERTIARY SYMPTOMS**.

Primary Symptoms are the immediate effects occurring on the spot where the *specific virus* has been deposited. These, in the earlier stages, at least, are inoculable.

Example—Chancre and its varieties, together with bubo.

Secondary Symptoms are the consequences of absorption of the syphilitic virus into the system, and the resulting contamination of the organism. These secondary symptoms follow within *the first few months* of the existence of the indurated form of chancre. They affect the superficial tissues only, are generally dry in character, and are not fatal to life. They may be, but are not necessarily, hereditary. They are not capable of transmission by inoculation, and seldom (though when once established they may re-appear from time to time in the same individual) can be produced *de novo* by a fresh infection. Example—Various affections of the skin and mucous membranes.

Tertiary Symptoms are the most advanced consequences of the absorption of the syphilitic virus into the system. They seldom appear before six months from the time of infection, and often much later. They are not inoculable and not hereditary. They attack the deeper tissues and bones, and may be fatal to life. Example—Nodes, exfoliation of bone, &c.

In addition to these three subdivisions, there is another manifestation of syphilis, which deserves consideration in a separate chapter—viz., **HEREDITARY SYPHILIS**, or syphilis in the infant.

We shall terminate our discussion of the subject with a chapter on **SYPHILOID DISEASES**, or diseases resembling syphilis.

to account for the apparent absence of chancre. The full details of these inquiries will be found at page 232, *et seq.*, of "Leçons sur le Chancre," by P. Ricord.

* "The term was probably invented by Fracastorio about the close of the fifteenth century, from *σύν* and *φιλέω* importing mutual love; for such is the title by which he has designated his celebrated and very elegant poem upon this very inelegant subject."—(Mason Good.)

CHAPTER I.

PRIMARY SYMPTOMS.

THESE, as has been said, form the first great subdivision of syphilis, and depend on the immediate effects of the specific virus occurring on the spot where it has been deposited.

Under the head, then, of primary symptoms we shall describe, 1st. CHANCRE AND ITS VARIETIES; and 2nd, BUBO.

SECTION I.

CHANCRE.

Chancre is a specific syphilitic ulcer. Until within the last six years it was supposed that chancre *depended upon a cause, always the same in its nature, under whatever form the sore presented itself.* It has been since maintained that it may arise from one of *two different poisons.* However this may be, chancre may most certainly be derived from the secretion of another ulcer, which it re-produces during a certain period of its existence. It is also satisfactorily proved that chancre at its commencement is a merely local disease; for if it be completely destroyed during the first six days of its existence, no general consequences will follow. Indeed, sometimes the ulcer may remain for months or even years a merely local affection.

In certain well-ascertained cases, however, it gives rise to symptoms of general poisoning of the system, known as *secondary or constitutional symptoms.*

DIVISION OF CHANCRE.—There are two kinds of primary sores. The broad distinctions between them are, the *hardness* or *softness* of their bases, and their *infecting* the constitution, or *not.* They have been accordingly classed, and will here be discussed under the two heads of, 1st. SOFT, SIMPLE, UNINFECTING CHANCRE; 2nd. INDURATED or INFECTING CHANCRE. Each of these, again, allows of subdivisions which will be fully treated of in their proper places.

SOFT, SIMPLE, UNINFECTING CHANCRE.

The best method of commencing the discussion of this form of sore will be to describe what happens when artificial inoculation is performed on a healthy individual, as by this means we shall gain a clearer and less complicated view of what really constitutes soft chancre.

ARTIFICIAL CHANCRE.

ANATOMICAL CHARACTERS.—If the pus be taken from a chancre during its ulcerating period, and introduced, by means of a lancet, under the epidermis of the inner part of the thigh, or any other part of the body, of the same individual, the following results will be obtained.* (See Plate V. Fig. 1 and 2.)

During the twenty-four hours succeeding the operation, the inoculated point becomes red, Fig. 2, *a*; in the course of the second and third days the surrounding parts are slightly swollen, and assume a papular appearance, or already traces of a vesicle are seen on the summit, Fig. 2, *b*, *c*; on the third or fourth day a fluid, which is more or less transparent, is observed beneath the epidermis, and a distinct vesicle becomes apparent, where the papula previously existed, and a dark dot is seen in the centre, owing to the coagulation of the blood which had escaped through the puncture of the lancet *c*, *d*; from the fourth to the fifth day the vesicle assumes a pustular character, and a distinct depression is seen in the centre, so that it represents very distinctly at this period the small-pox pustule, *d*, *e*. The red areola, which has been hitherto gradually augmenting in intensity, now as gradually fades away, and the cellular tissue, which was slightly cedematous, becomes infiltrated with plastic lymph. On the sixth or seventh day the pustule is observed to be wrinkled, in consequence of the contents becoming thicker, and ultimately a crust takes the place of the pustule, *f*, *g*. If not interfered with, this crust assumes a conical appearance, increasing always at its base; it may ultimately fall off, or, if removed, leaves an ulcer seated on a slightly cedematous base, in depth equal to the thickness of the skin:† the bottom of the ulcer is covered with a whitish pulpy substance or false membrane, which adheres so firmly, that it can with difficulty be wiped or washed

* Scruples, which cannot be too much applauded, have prevented M. Ricord from inoculating healthy men with syphilitic virus, so that *our* experiments have been generally made on an already infected individual; still in the experiments which have recently taken place in France, and which will be detailed at page 272, where Dr. Wertz inoculated himself from a monkey, and in another instance, in which M. Vidal de Cassis inoculated one of his pupils,—it was found that the inoculated point presents, with the exception mentioned at page 291, exactly the same special characters as when an already infected person is inoculated.

† The base of a simple chancre may be deficient in all inflammatory engorgement, and may present to the finger a suppleness quite equal to that of sound tissues. In such cases the diagnosis is easy enough. But it may happen that the tissues which support the chancre become the seat of a thickening more or less considerable, and offer an unusual resistance to the touch. If in such a case the base be gently pressed between the fingers, so that the resistance offered by the parts squeezed may be appreciated, exactly the same sensation will be experienced as on pressing the engorged base of a boil. It is a hard dense resistant tissue that is felt between the fingers; but this *phlegmonous hardness* is very different from the specific induration which belongs to the other variety of chancre that I shall have soon occasion to make known to you.

Hardness and Induration.—These are by no means synonymous.

The character of the base is the first and most important sign in the methodical examination of a chancre. It alone will frequently be sufficient to distinguish the two varieties of the primary venereal sore.—(Page 32, "Ricord sur le Chancre.")

off. The circumference is very regularly circular, and appears as if made with a *punch*, Plate V. Fig. 1, and Fig. 2, *h*.*

The margin, if viewed by means of a microscope, will be found dented and covered with a secretion similar to that seen at the bottom of the ulcer. The border is slightly œdematous and raised, and the areola around it is of a browner tint than at the previous stages; this œdematous condition of the border occasions a slight eversion of the edges, and hence the ulcer may assume a somewhat infundibuliform appearance.

If the pus of a chancre, such as we have described it, be examined under the microscope, it will be often found to contain animalcules, particularly the *vibrio lineola* of *Müller*. The experiments of M. Donné have likewise proved that it may present either alkaline or acid reaction, circumstances depending upon its situation, &c. This secretion varies in consistence, but is usually of a thin, serous, and sanguinolent character. The peculiar pathognomonic character, however, of the pus is the action which it produces on the animal economy when inoculated with it; for no other secretion with which we are acquainted, or which I have seen employed, will produce similar effects.

In tracing chancre to the secretion of a previously existing ulcer (the quantity of which, however minute, will constantly produce its effects,) M. Ricord was necessarily led to push his investigations further; but neither the microscope nor chemical analysis has enabled him to isolate the virus: all his endeavours have hitherto failed in separating it from the other component parts of the secretion of the sore, and whether it exists as an entity, or in combination with the globules, or the fluid part of the pus, or whether these serve only as a vehicle for it, we are unable to say, so few are our data for forming an opinion.

We are equally ignorant of the exact part of the sore which furnishes this secretion. We find it on the surface of the ulcer; washing or wiping it away only removes it for the moment—it becomes secreted afresh directly afterwards, but does not resemble the peculiar action of *leaven*—a term applied to it by ancient authors.

We shall then, in accordance with the usual custom of authors, call this peculiar secretion, which is the cause of chancre, a *virus*—not that we have been able to show its separate existence, but simply because the word secretion is too vague. We shall combine it with the word syphilitic, as this term distinguishes it from all other morbid agents, and treat of the cause under the denomination of *syphilitic virus*.

This secretion, removed from the surface of the chancre, and kept in close bottles during seven days, will produce at the end of that period all its effects, proving that the vitality of the part is not necessary for the preservation of the peculiar effects of the virus. To show the infinitesimal quantity of virus necessary for producing

* This circular character of the ulcer, which is generally well seen in artificial chancre, is not always met with in practice. For instance, it does not appear when a part of the sore is situated at the base of the prepuce, and the other on the glans. If chancre occurs in the folds of the prepuce, or at the anus, it rather resembles a crack or slit than a circular sore.

specific effects, one drop has been diluted with a pint of water, and the inoculated fluid has produced a pustule.

Various chemical agents have the property of neutralizing or destroying it; if alkalies or acids be mixed with it, and inoculation afterwards attempted, no effects will follow; these same substances will likewise destroy the property with which inoculation has invested the sore—viz., that of producing an analogous secretion, provided they be employed at an early stage.

Simple substances, or ointments, will have no influence either in destroying or aiding the effects of the secretion.

The situation of the sore has been often shown to have no influence on the pus, which acts equally on all parts of the body; no erethism or peculiar vitality of the part is necessary, and the pus need not be warm or recently secreted, to produce its effects.

THE EFFECTS OF VIRUS IS PECULIAR TO MAN.—Until the year 1850 this pus had been supposed incapable of producing its specific effects on animals, notwithstanding all the attempts that John Hunter, Ricord, and others had made to inoculate them. M. Auzias believed, indeed, that he had succeeded in inoculating animals; but, as stated in the foot-note,* it is still a very doubtful question, whether,

* Hunter says, "We know of no other animal that is susceptible of the venereal irritation; for repeated trials have shown that it is impossible to give it to a dog, a bitch, or an ass. I have repeatedly soaked lint in matter from a gonorrhoea, chancre, and bubo, and introduced it into the vagina of bitches without producing any effect. I have also introduced it into the vagina of asses without producing any effect. I have introduced it under the prepuce of dogs without any effect. I have also made incisions and introduced it under the skin, and it *has only produced a common sore*. I have made the same experiment upon asses, with the same result."—"Hunter on the Venereal Disease," 4to, 2nd edition, page 20.)

M. Ricord, during the time that he was pursuing his experiments on the inoculation of syphilis, attempted to communicate the disease to dogs, rabbits, Guinea pigs, cats, and pigeons, but could not succeed; and he believed, after repeated attempts, that syphilis was not capable of affecting the brute creation.

More recently M. Cullerier, surgeon to the Venereal Hospital (in consequence of the experiments of M. Auzias, mentioned below), has, by every means in his power, attempted to inoculate animals; and, in a paper to be found in the first volume of "*Les Mémoires de la Société de Chirurgie*," that gentleman has given at length the experiments he made on monkeys, Guinea pigs, cats, rabbits, and dogs, in all amounting to twenty-five in number, and, although assisted by M. Auzias himself, in no one instance was he successful.

In 1844 Dr. Auzias brought the subject before the French Academy of Sciences, and asserted that he had effected what John Hunter and Ricord had been unable to accomplish. A committee was formed to report on this subject, and they came to the conclusion of *not proven*. Such was the state of the question when, in the month of May, 1850, the subject was again taken up by M. Auzias, assisted by a German-physician, Dr. de Wertz, then studying in Paris under Ricord, and from a paper which he published in the French *Medical Gazette* for 1850, as well as a letter in *L'Union Médicale* of the same year, by M. Auzias, we take the following particulars.

The reason why animals had been hitherto unaffected by syphilis is stated by these gentlemen to be, that inoculation had been attempted on such parts of the body as the animals were able to lick; hence the preceding failures. To avoid this, monkeys were inoculated behind the ear, and during a visit I made to Paris, M. Auzias was kind enough to show me the plan he pursued. A monkey that had become very tractable, by being fed and fondled by the operator, was chosen; and on the outside of the ear a small incision is made by a pair of curved pointed scissors, care being taken that the epidermis alone is divided, and that the part do not bleed. (I may mention that this part of the skin of the monkey is very fine

syphilis has really ever been communicated to animals; and if, in the few cases in which this is said to have occurred, the virus has not

and delicate, and is almost destitute of hair.) A quantity of chancrous matter is now taken and applied to the incised surface, so that it shall come in contact with the dermis. During the following two or three minutes, M. Auzias continues to moisten the part he is inoculating with an additional quantity of secretion from the chancre, or with saliva. This is done for the purpose of preventing the coagulable secretion thrown out by the incised surface enveloping the virus and preventing its action (as the secretions are stated to be more coagulable in animals than in the human race). It may be here remarked, that a deposit of the virus is thus left unlike that in our ordinary experiments on man, and the importance of the fact will be noticed presently. Treated in this way, a red areola will surround the incised point on the following morning, and in twenty-four hours later a vesicle, followed by a pustule, and subsequently a scab succeeded by an ulcer, are said to be observed. These ulcerations enlarge to a certain extent, then gradually diminish, and ultimately cicatrize. They are stated, during ten days, to have exhibited a kind of induration in the cicatrix, but which subsequently disappeared.

The same animals were taken, and the same or the opposite ear was inoculated in a similar manner with the secretion of these ulcers, and a second series of similar phenomena were observed. The secretion was likewise inoculated on other monkeys, and similar ulcers followed. In September, 1850, I saw (through the kindness of M. Auzias) the monkey that had been the subject operated on in the month of July, and a healthier animal I never saw. I examined carefully the skin, and no traces of secondary symptoms could be noticed. The throat was closely examined (for the animal had become very docile), and no appearance of any disease could be observed. The ulcerations on its ears had long been healed.

The operator therefore concludes that he has been able to inoculate animals with primary sores, and that others, by taking the same precautions, will equally and invariably succeed.

My reader will at once, perhaps, ask, is this ulceration on the monkey a chancre; and can it be transmitted back to man? To test this, Dr. de Wetz inoculated his right arm with the secretion from the monkey, and the characteristic pustule, as described and delineated at page 270, was produced; and on being shown to M. Ricord, he decided that it was a true chancre. M. de Wetz further states that Ricord inoculated his (M. de Wetz's) left arm with pus taken from the chancre of the monkey, and the usual phenomena were observed; thus clearly showing, in the opinion of Dr. de Wetz, that the ulcer on the monkey was a true syphilitic primary sore. The sores on his (Dr. de Wetz's) arms were, at the expiration of ten days, destroyed with Vienna paste; and the last account he gives of them is, that a black eschar covers the late ulcers, and that a liquid pus exuded from their margin; but although a good deal of inflammation occurred around the ulcers, no tumefaction of the glands of the axilla took place, nor had secondary symptoms resulted, at the time this statement was published (July 22, 1850), the first inoculation having taken place on the 9th of June.

Although I saw the monkey that had been operated on, and although M. Auzias was kind enough to show me his process of operating, my stay in Paris was unfortunately too short to watch the development of the pustule in the monkey, and M. de Wetz had left the metropolis; so I was unable, from personal observation, to judge of these statements.

It would appear, however, that at present (1850) the profession in Paris are very incredulous on the subject. M. Cullerier complains, and I think very justly, that M. Auzias, with whom on former occasions he was associated, did not invite him to be present, when his inoculations succeeded, on these recent occasions. The presence of M. Cullerier would undoubtedly have given great additional value to the results. M. Cullerier suggests that, in experiments performed as these have been, in which a large quantity of the virus is taken and inserted beneath the dermis of the animal, that it might have been merely kept in a reservoir there; for we have stated at page 271, the virus may be kept many days in a bottle, and then develop in the human being all its peculiar effects; "and," adds M. Cullerier, "the experiment will only be accepted when we have determined a suppurating ulceration, which we may wash several times, so as completely to disembarass it of the pus which has

merely been transplanted ; this at least, on the evidence we at present possess, seems to have been the case.

Ricord in a late lecture says :—

“Up to the present time we have been unable to produce by direct inoculation the extension and continuous ulceration which seems peculiar to man. The only appearance is a slight sore resulting from the wound of the lancet, presenting no peculiar characteristic, and exhibiting an almost irresistible tendency to heal.”

Animals occasionally do suffer from an ichorous discharge from the male organs, which has been called the foul disease ; but this depends upon irritation.* Cancer will likewise attack these organs in animals, producing a sanious discharge ; but this is not syphilis.

PROGRESS OF ARTIFICIAL CHANCRE.—If the sore be kept clean, it may show very little tendency to increase, and may remain a considerable time in *statu quo*, provided no excesses are committed. Under these favourable circumstances, the disease has a very mild character, quite at variance with those symptoms usually attributed to it. Weeks may pass, and the chancre not become larger than a split pea, although the areola may assume a somewhat livid appearance.

produced it, and which can be subsequently transported to another part of the monkey or man himself.”—(“*L'Union Médicale*,” *loc. cit.*)

“But if,” adds M. Cullerier, “my attempts at inoculation have failed with virulent pus, so that I have been unable to produce on any one occasion an ulceration of a chancreous appearance, the same has not occurred when I have wished to determine a wound which presents these characters. Thus, I removed a small piece of skin from the forehead of a monkey, and applied nitrate of silver to it ; at the end of forty hours I pulled off the eschar and cauterized the wound afresh, and three days after I had an ulceration which could pass muster as a specific sore with many persons.”—(“*Mémoires de la Société de Chirurgie*,” vol. i. p. 531.)

M. Ricord, in discussing this subject in his letters on syphilis, in “*L'Union Médicale*,” tome iv. p. 358, says, “Up to this point only primary and essentially local symptoms have been produced in the monkey : this is not *la vérole*. Has the monkey served only as a transplanting ground for the virus? This is possible. We are justified in concluding so until we have been able to produce in the animal constitutional symptoms. This opinion is the more probable, inasmuch as some English syphilographers pretend that a chancre is not a specific sore unless it becomes indurated.”

“We here see that this” (he is speaking of the little local irritation inoculation produces on the monkey) “is ground which is very refractory and foreign to the chancre. The virulent seed or grain is an exotic. Notwithstanding all the precautions which may be taken in order to sow it, water it, or nurse it in a greenhouse or under glass, it dies before it has shot out its roots, and consequently before it produces any fruit.”

“Until this experimental programme has been filled up, this solitary experiment will be insufficient to destroy all that has been established by serious men on the numerous and well-studied facts. It can be only said at present, that we can deposit and preserve virulent pus on the monkey, and make use of it afterwards in inoculating man, just as we transplant a shrub from one nursery-garden to another. This is all I have seen and satisfied myself about ; this is the only deduction that I can draw.”—(“*L'Union Médicale*,” tome iv. pp. 369, 370.)

I may add that in my late visit to Paris (October, 1859), I ascertained that no further experiments had been made on this subject. The general impression is what I state in the text, that all animals are refractory to syphilis, that a *raw* may be established on them, from which virus may be taken as from a bottle, but that no further consequences will follow, no constitutional symptom result, nor will the sore become indurated.

* See the “*Functions and Disorders of the Reproductive Organs*,” page 74.

If during this period (the duration of which is very uncertain) pus be taken from the sore, and inoculation repeated, the same phenomena will recur, and an unlimited number of chancres may be reproduced.* If for the sake of experiment the sore be left to itself, it will be found that after a certain time portions of the small ulcers cease to secrete the poison, and ultimately the whole sore fails in supplying any more of the special virus. Of the laws which regulate this we know nothing; but observation teaches us that when the sore begins to throw up granulations from the bottom this period is approaching, and ultimately it heals, like any other ulcer. This period may commence in a fortnight, or be delayed a long period. Until the sore is entirely healed it generally continues to secrete the specific virus. Should, however, the small ulcer thus heal, and a cicatrix form, the human frame is as susceptible of undergoing for an indefinite number of times the same local changes from inoculation as previously. The system by being once inoculated with syphilis is in no way less predisposed to a second maturation of the pustule; the power that the virus possesses of converting into its own likeness those appropriate materials of the blood which come in contact with it, will still exist in all its pristine force.

Having then described the course of simple uncomplicated artificial chancre divested of all extraneous circumstances, which only tend to render the subject obscure, let us now consider the *natural* chancre, and see in what respects it differs from this the artificial one.

NATURAL SOFT UNCOMPLICATED CHANCRE.

Simple chancre arising from natural causes does not follow the exact course we have described as that of chancre produced by inoculation, but presents peculiarities which it will be my object to notice in the present section.

Simple chancre is by far the most common. At the Venereal Hospital it has been found that out of 10,000 chancres seen between the years 1846 and 1852, 8,000 were simple ones, and only 2,000 indurated ones giving rise to secondary symptoms.

Soft chancre is the ulceration which presents to the greatest degree the characteristics of specific virulence. It spreads contagion right and left, it inoculates all that it touches. Consequently we often observe many soft chancres on the same patient; for it will multiply itself with an extraordinary fecundity by means of a *series of successive neighbouring inoculations*. It is the simple chancre also which furnishes the most fruitful source of virulent pus.

Of the patients received in 1857 into the French Male Venereal Hospital, it was found that out of 254 patients affected with simple chancres, no more than 48 suffered from only one sore, while 206 were affected with more than one.

* A M. Lindmann reinoculated himself with the secretion of simple chancre more than 2000 times, and in no instance did he fail in reproducing the characteristic pustule. (See "Leçons sur le Chancre," par P. Ricord, p. 240.)

These 206 patients were divided into different groups as follows :—

Patients presenting 2 chancres	32
„ from 3 to 6	116
„ from 6 to 10	41
„ from 10 to 15	8
„ from 15 to 20	4
„ above 20	5

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USUAL SITUATION.—There is scarcely any part of the *trunk* or *extremities* which I have not seen the seat of chancre,* but the frequent exposure of the delicate membranous covering of the genital organs, as well as the number of follicles it contains and the difficulty of completely examining them, render these parts most liable to the complaint. A chancre, in virtue of being seated on the organs of generation, presents no peculiarity, distinguishing it from one in any other position. Accidental circumstances, such as friction, &c. may modify it, but erethismus, erection, or intense vitality of the part influence it in no way that we are aware.

NATURAL MODE OF CONTAGION.—Chancre is most frequently contracted in connexion, but coition is by no means necessary, as the profession have frequently proved to their cost that chancre may attack the finger of the surgeon who operates on the pauper vagrant labouring under primary disease. Generally abrasion of the skin, or some lesion of continuity, is necessary before the poison can act, or, as Dr. Gregory (see p. 287) would say, before the constitution would act on it. Many persons have connexion with females labouring under chancre, and escape. This apparent immunity arises from the fact, that the fortunate individual has a firm, tough, entire skin; and there are many dissipated characters who boast in the nineteenth, as they did in the fifteenth century, that they are syphilis-proof. True it is that they may escape in numerous instances, but the cause is apparent, and the slightest abrasion occurring, all this fancied immunity vanishes. I have known persons in the French hospitals state that they would allow syphilitic virus to be placed on a portion of healthy skin a certain time and dare the consequences; but I never witnessed any experiments to show how long the virus may remain in contact without producing its effects. In practice, however, we have reason to know that the virus will (and must in many instances) have remained a long time in contact with healthy skin, and no effects have been produced until abrasion of the epidermis has taken place, or imbibition or reception into the system has occurred, and then we see the effect immediately follow. The virus may enter or be forced into the follicles of the skin, and we have reason to think that it may remain a certain period under the same conditions as if on the surface of the skin; no sooner, however, has

* M. Ricord, however, states that, during twenty-five years he has been engaged in practice, he has never yet seen a single case of well-authenticated *soft* chancre on the face or cranium, although he has met with *indurated* chancres in hundreds in those situations. "I have (he says) met with chancres on the lips, tongue, eyelids, forehead, nostrils, on the scalp, &c., but they have been always attended with induration, and with symptoms betokening constitutional disease."

the lining membrane of these follicles been destroyed, than the local action commences. (See Plate V. Fig. 4.) It has been stated that the virus may enter the system without local abrasion. It would be difficult to deny or altogether prove such a position; for who can say that the epidermis was intact? and it is well known that the smallest puncture only is necessary for the introduction, so we will not dispute about a question that is of no great practical importance. It is enough for the surgeon to know that the virus may remain in contact with the skin and not act; but that immediately it is placed beneath it the action is excited, which nothing will stop but cauterization, or entire destruction of the inoculated point.

From a case lately brought under my notice, I am induced to believe that an animal poison may pass down by the side of a hair-bulb, and thus enter the system without any abrasion or lesion of any kind. If this really can happen, many doubtful cases of infection can thus be explained.

Nevertheless, the most simple way in which chancre commences is the deposition of virus on the surface of the skin. Wallace, who of all authors seems to have paid the most attention to this subject, states that action commences from the third to the seventh day, but no doubt can exist that a longer period may be required.*

Sometimes a thin scab is seen on the surface, sometimes a pustule; in other instances, the first evidence we have is a little ulcer; but on the skin we are rarely called on to treat ulcers in the early stages, as their surface soon dries, leaving a scab; sometimes the matter burrows underneath and makes an abscess, or the complaint puts on all the characters of a boil. In private practice, however, these forms of disease are very uncommon; in fact, chancre on the skin of the genital organs is rare, for, provided cleanliness and plenty of soap and water be employed, such results are unlikely to happen.

The principal exception to the rule is in persons who have a long narrow prepuce: we then find chancres commencing at the orifice as so many little cracks or linear chancres, which appear in the folds of the prepuce, very different from that oval or rounded shape that chancre usually assumes in its early stages. If a poultice or water-dressing be applied, the crusts fall off, and then we have a more or less circular sore of the thickness of the skin, with serrated edges, a little thickening of the surrounding tissue, and the bottom of the ulcer covered with a chamois-leather looking secretion, which is very tenacious; the areola is of a bright colour; in fact, it resembles as closely as possible artificial chancre, as seen in Plate V. Fig. 2, *h*. I might dwell at considerable length on a variety of little details which are of no great practical value, but to those desirous of further studying the matter, I would refer to Wallace's book, page 65, where these minute points are elaborately investigated.

Chancres on mucous membranes, or on parts which are covered with membrane that is constantly moistened, usually commence at once as little excoriations or ulcers, which may be isolated or coalesce, forming one circular, or portions of a circular sore, and then assume all the characters of the chancre mentioned above, to which water-dressing has

* Wallace on Venereal, p. 65, *et seq.*

been applied. In some instances, very small pustules make their appearance, as in Plate V. Fig. 4, coalesce, burst, and form a regular open sore, secreting little, but this secretion is capable of producing the same series of phenomena we have been describing under the head of Artificial Chancre.

PROGRESS.—From this period all simple chancres (on whatever part of the body they are situated) have a slight tendency to increase by ulceration of their margin; they then become stationary, still secreting the virus, but (if not interfered with) producing little mischief. After a time the chancre fails to secrete virus, little rose-granulations take the place of the chamois-leather looking tenacious membrane at the bottom of the sore, and cicatrization follows, although a discoloured mark, like that following vaccination, will remain for a long time.

Such is the natural course of chancre, when reduced to its greatest simplicity, and disembarassed of its complications; but there is no period of its development, existence, or reparative stage during which it may not undergo very considerable modifications, as will be hereafter shown when treating the Varieties of Chancres.

ORIGIN OF THE SYPHILITIC VIRUS.—We have just traced syphilitic virus to the secretion of a particular sore, which itself has been produced by the specific virus of a similar ulcer originating in the same way; at least we can affirm that at the present day there exists no well-authenticated observation in the annals of science proving the spontaneous or sporadic origin of syphilis. Hence we say, that a chancre (primary ulcer) during its period of progress or during its specific *status quo*, is the only source of the syphilitic virus (the inoculable morbid poison).

Undoubtedly (observes M. Ricord) we daily meet with cases which it is difficult to explain; but when we consider the many sources of error liable to occur, and that our patients often have an interest in deceiving us,—the disease being so often contracted under illicit circumstances,—we may be assured that the one exceptional case* in a thousand ought to be attributed to the same cause as the nine hundred

* Mr. Carmichael, differing from these views, says, page 17, in his *Clinical Lectures on Venereal Diseases*:—"From these circumstances we should be led to conclude that mild forms of disease are eternally arising from the sexual intercourse of even persons in health; and I have so often seen troublesome ulcers arise in men who had connexion with women above suspicion, while they had on them at the time crops of herpes præputialis, that I feel the more confirmed in this opinion."

I quite agree with Mr. Carmichael, as will be seen at page 259, under the section on Excoriations, which see; but these affections do not produce secondary symptoms.—W. A.

Dr. Fergusson, in his "Notes and Recollections of a Professional Life," page 122, says, "I believe, with my friend Mr. Guthrie, that wherever prostitution is foul and unclean, restricted to few women amongst crowds of men, there the infection will be generated, which afterwards spreads through society at large. The irregularities of man are at all times punished by the generation of diseases and loss of health; and it would be difficult to believe in a superintending Providence if this transgression of divine and human laws should be allowed to pass unpunished."

These, and other similar opinions, are at best but convictions, and as convictions are very different from well authenticated facts, I shall not discuss them further. The reader, on referring to the Introduction, will find cases which might have been readily taken for syphilis arising *de novo* in the present day.

and ninety-nine, the origin of which is regular and constant ; and until it can be proved that other agents besides the secretion of a chancre will produce true syphilis, we must believe that it can arise alone from the secretion of a previously existing sore.

We must, however, frankly admit that, in the present state of science, it is impossible to determine where, when, or under what circumstances, the virus and its effects first appeared ; indeed, the origin of this, as of a thousand other facts, is entirely concealed from us, patent though their existence is.

My own opinion is, that syphilis in the human race originally arose from some poison introduced into the economy from animals or decomposing animal matter, and that, thus produced, it has been transmitted from one individual to another. And I by no means disbelieve that, by directing our attention to the subject, we may be able one of these days to detect how this has taken place ; and I trust that the important hints to pursue this investigation further which I have placed in the foot-note,* may direct the attention of the

* The first hints that I have found of this opinion, expressed in rather an allegorical manner, are those by the Belgian, Van Helmont, who published his work in Latin in the year 1640. That author states, "A layman said that he had beheld in his mind's eye a mare which was nearly dropping down from a fetid ulcer, which disease is peculiar to the nature of horses. The people of our time call it 'den worm,' but the French 'le farcin,' by which horses gradually die from purulent caries. This beast he saw cast aside as meat for dogs, presenting its whole hide diseased, even to about its sheath ; nor had he another answer beyond this hypothesis : on which account he said it was his suspicion that at the siege of Naples (where this dreadful disease first made its appearance) some one with horrid abomination had connexion with a beast of this sort. Thence truly I conjecture the infrequency of this disease not having been noticed before, for I cannot suppose that an abomination of this sort had ever been easily committed under such circumstances since the world's formation ; and the disease of syphilis is similar, nearly related, and common with that occurring in horses. And it might thus, by the avenging power of God permitting, have transplanted its rage naturally upon the human race, threatened as it had been by God before. I mean to affirm, that contagion, the result of wicked lasciviousness, has flowed from the horse (just as at this day the disease itself is conveyed through libidinous sordid passion to the testes of the male), propagating gonorrhœa, carcinoma, and venereal buboes ; but I give up being over inquisitive upon any matter where science is of no use, unless you prefer concluding from hence that horses thus full of sores, might be cured by the remedy of syphilis, namely, mercury duly prepared. The consideration of syphilis is of service in the noisome and increasing pest of this day, and many are the pests which are threatened in the sacred writings on the coming of Antichrist."—("Tumulus Pestis," page 26.) *The original work may be seen and consulted in the library of the Royal College of Surgeons.*

This opinion of Van Helmont has been much ridiculed. Future experience will, however, show whether at least there is *not some foundation* for the belief. In the year 1850, an eminent surgeon to one of our largest provincial hospitals (who begs me not to mention his name) told me that some years ago he was consulted by a country lad who was suffering under what he, as a surgeon, considered to be secondary symptoms ; the patient denied having ever had connexion with women, but acknowledged that he had had unnatural intercourse several times with a mare. I may be told perhaps that an isolated fact like this proves little, and so it does ; but in combination with what others have observed, some future value may be placed on the statement.

I find the following in my note-book :—

Peculiar Affection resembling Syphilis in a Blacksmith's wife.

March 14, 1845—Mr. Lane took me to-day to see the wife of a blacksmith, living in Tattersall's Yard, labouring under the following *symptoms* :—

profession to this important question, and I shall at all times be very happy to receive any facts, or have my attention called to any cases bearing on the question.

The middle finger of the right hand (the first joint of which had been removed) presented a livid red thickened cuticle, the epidermis peeling off in small scales; the cicatrix of the finger that had been operated on presented the same appearance; the surface was rugous, there was inability to move the second joint; it looked like the rugous leg of elephantiasis, only livid, or like boiled ham. The discoloration was confined to this finger; running up the back of the fore-arm, we observed several little tumours as large as split horse-beans. There was no discoloration of the skin over them, and each little tumour was perfectly moveable. On the lower lip was an ulcer of the size of a broad bean; the edges raised; the bottom partly covered with a white secretion, and here and there a soft but large granulation. Close to this was a spot, level with the surface, like a stain, as large as a split pea, in colour like boiled ham. No other spots on the body. Her pulse presented nothing unusual; the tongue clean; the patient's constitution phlegmatic, complexion blond, gums pale.

HISTORY.—Some time since an ugly, ragged-looking edge of the nail of the middle finger became irritable without any cause that she was aware of, and spread to the joint, where the pain remained. She did not at the time remark anything peculiar, but, as the cicatrix was healing, the finger suddenly took on the unhealthy action, and soon afterwards the tumours appeared on the back of the arm, and subsequently a little spot on the chin like the stain now present, became circular and extended to the present size.

In mentioning this case to M. Ricord, on the occasion of my late visit to Paris, he stated that he had likewise met with a few cases that bore out the opinion, that by some means or other animal poisons produced effects on the human system which bore strong analogy with syphilis; among others, he mentioned the case of a shoemaker, brought into hospital with ulceration of the palate, an ulcer on the eyebrow, and a tumour in the calf of the leg. In all respects these symptoms resembled those of syphilis, but the man had never had syphilis. Could the affection be farcy? On inquiry, M. Ricord learned that this shoemaker was in the habit of going frequently into the yard of a veterinary surgeon who lived close by his house, but the exact means by which the affection (if farcy it was) was gained never appeared. Potassii iod., added M. Ricord, succeeds in relieving syphilis, but it has little effect on farcy, hence our diagnosis in these doubtful cases.

Of late years the possibility of farcy and glanders being conveyed from the horse to man has been investigated, and numerous cases of rapid death have been detailed, but the more chronic affections have been little studied. May not many cases of intractable sores be in future found to depend upon chronic farcy, contracted from the horse? And should the attention of practitioners be now called to the fact, may we not hope to arrive at much valuable information, which may ultimately help us to discover the true source of syphilis?

In the first edition of this work I cited M. Ricord's opinion, in which he says, "If we may be permitted to proceed by analogy, we shall see in the history of the vaccine matter several curious and important deductions. The transmission from the cow to the human species has not always been so well known, yet it must have always occurred. Suppose, then, that at the present time we were ignorant of its origin, it would be no less incontestable that the vaccine matter is not of spontaneous origin in the human race, and that it becomes developed as a consequence of inoculation, or by means of the specific matter taken from an affected person, and applied to a healthy individual. Is it not possible that an analogous source, in the first instance foreign to the human species, may have furnished the first germ of syphilis, which, when once engrafted, has propagated and maintained itself, as does the vaccine matter, which, like it, was at first foreign to the human species?"

I would, however, by no means wish to confine the surgeon's attention to the possibility of syphilis arising from the horse. In the course of my practice I have seen some curious affections very much resembling syphilis. Some medical men may recollect the case of a young physician, now dead, who had raised tuberculated ham-coloured blotches, or tubercles, on his fingers. These lesions followed years after a primary disease which he contracted in the dead house while pursuing his

Let us now turn to the consideration of those accessory circumstances and conditions which are necessary for the production of the special effects of the virus. These we propose describing under three heads.

1st. *Necessary conditions of the chancre from which the virus is taken.*

2nd. *The conditions of the agents for the transmission.*

3rd. *The necessary conditions of the parts about to be contaminated.*

NECESSARY CONDITIONS OF THE CHANCRE FROM WHICH THE VIRUS IS TAKEN.—In the first place, it must itself have been derived from another chancre, which must be in the specific or progressive state,* for we have already remarked that it is during this period of the chancre alone that the peculiar virus is secreted. Provided the chancre presents this progressive ulceration,—(notwithstanding the length of time it has existed—be the physical characters well or ill defined, the shape circular or oval—the situation on the genital organs, arms, mouth, &c.) the virus will produce its effects if the other conditions be present.

We have just stated a general law, namely, that certain conditions of the sore, from which the virus is taken, are indispensable to the production of chancre. Yet to this law there are apparent exceptions;—a man has connexion with a prostitute, and chancres appear on the penis; the external and internal genital organs of the girl are examined, and no chancre is found. Here is the virus acting, and yet,—say some people,—it does not come from an ulceration. Such cases in practice are not uncommon, but they in no respect invalidate our position, for there is every probability that the virus has been recently deposited from an ulcer of a third individual on the vagina, which being covered with mucus is not affected, and thus the vagina merely serves as a vehicle for the virus, see page 284.

investigations on Pathological Anatomy, and which appeared on a part of the hand different from that on which he had inoculated himself.

Mr. Busk some years ago kindly directed my attention to a patient then under his care in the Hospital Ship, Dreadnought, with a pustular eruption over the whole body that almost every one would have taken for secondary symptoms, and yet he (Mr. Busk) is familiar with the complaint as one occasionally brought on by eating bad meat. Dr. Burrows relates a case in the *Medical Times and Gazette* for June 14th, 1856, where he describes a vesicular eruption resembling acute pemphigus, occurring in a young butcher. The virus apparently came from a sheep's head, in skinning which he wounded his thumb. In five weeks a vesicular eruption appeared on his lip, and spread over his body. The eruption lasted fourteen days, producing fever and all the symptoms of poisoning of the blood. This, however, is not syphilis.

* The following statistics on inoculation are given by Dr. MacCarthy in his "Thesis," page 10.

"In the wards of M. Puche, inoculation with blennorrhagia was performed sixty-eight times without producing the specific pustule.

"In the instance of inoculation with the secretion of twenty-four chancres, the specific pustule was produced sixteen times. In the other eight instances in which the negative result was obtained, such a result was foretold; in five instances, the chancre had assumed a granular rose-coloured reparative process; in two instances the chancres had previously cicatrized and broken out afresh; in one case the chancres had assumed a gangrenous character." These results are important, as they were made by one opposed to many of the doctrines of M. Ricord.

THE MEANS AND CONDITIONS OF THE AGENTS OF TRANSMISSION.

—The fact that the virus is capable of being separated during a space of seven days from the ulcer which has produced it (see page 271), without losing its contagious properties, has been already mentioned; at the end of that period, if still in a liquid state, or if dried, provided it be only moistened, the virus may be transmitted in a variety of ways, of which we may enumerate some of the most frequent.

Lancets or other *cutting instruments* may accidentally become soiled with the virus, and thus the surgeon may unconsciously inoculate an incised wound. We have been witness of a case of this kind: venesection was ordered and performed in the usual way; a few days after the patient drew the attention of M. Ricord to the punctured point in the arm, which assumed *all the characters of chancre*, and was very difficult to cure, as induration followed. Such a case shows the necessity of great caution in the employment of instruments which may have been soiled with the virus.

The *Penis* may serve as an agent of transmission of the virus, as in cases like the following. A young man had connexion with a prostitute; in the course of the same day he had connexion with a female who previously had been free from disease; in a short time chancres appeared on the second female, although the young man never presented any symptoms whatever of syphilis. Here, then, the penis was a simple agent of transmission, as the lancet was in the last case.

The *Vagina* may become a means of transmission of the virus; this frequently happens in prostitutes. An individual suffering under chancres has connexion with a girl; a quantity of virus is left in the vagina, but produces no action (see case, page 284), because the mucous membrane of the vagina is covered with secretion. Should a second individual have connexion with this female under these circumstances, the virus may affect him, and no local disease be discovered on her genital organs, even after the most minute examination. Such cases are not infrequent. Here the penis has performed the part of a sponge, and completely cleaned the vagina, which was simply a passive agent of transmission.

Various secretions have been often accused of causing or transmitting the virus. *Semen* is spoken of as among the most frequent. That this may occur is undoubted; when a urethral chancre exists, the semen may, in passing over it, carry along the virus which is placed on the surface; in a similar manner the *milk* may become a vehicle for it, provided a chancre exists on the nipple. The *saliva* may become charged with the virus, if a primary sore exists on the mouth, of which we shall hereafter give instances.

At the present day we are little disposed to give credence to stories of chancre transmitted by means of the *breath*; and in the nineteenth century a minister of the crown is not likely to be accused of communicating the affection to his royal master by means of whispers. We now attribute a chancre rather to the company a man keeps, than to the air he breathes.

Various articles have the character of transmitting chancre; the late Mr. Colles believed that in Ireland the inmates of a cottage became infected by the use of the sole *spoon* that a peasant family possesses.

M. Cullerier mentions that at the Venereal Hospital chancres on the mouth and lips have been transmitted from one individual to another by means of *tobacco-pipes*, *drinking-glasses*, &c. The employment of *chamber-pots*, and sitting on *water-closets*, have been successfully invoked to explain various difficult cases. Believing that such means of transmission are possible, we maintain that they are not probable, and the medical man will rarely have his credulity taxed on this score, except by married people. Patients will be always disposed to conceal the true source of the disease, particularly if illicit practices have been indulged in; and in affections of the mouth it occasionally is very difficult to distinguish primary syphilitic sores from various aphthous ulcerations which are epidemic, and run through whole families, in consequence of similarity of diet, clothing, low unhealthy situations, &c.

Sheets have been believed capable of transmitting the virus; patients affected with simple eruptions on the skin have slept in sheets on which the secretion of chancres has fallen, and simple sores have thus been converted into characteristic chancres. I witnessed a case where this was the ostensible cause of the complaint in a patient of M. Puche, who presented chancres on the penis; he stated that he was taken up in consequence of the riots of May, and put in a prison where prostitutes had been previously kept; about two months afterwards chancres appeared on the penis. Now in this case the patient wished us to infer that the sheets were the source of the affection; but when we state that the prisons of Paris have been known to be the scenes of unnatural crimes, we should rather conclude this to be the source of the sores, and not the sheets.

Various articles used in dressing wounds may accidentally become the means of transmitting the virus, particularly *sponges*, *lint*, &c. During the winter of 1839, M. Ricord removed a portion of diseased bone from the orbit of a patient labouring under tertiary symptoms; the wound took on a peculiar appearance some few days afterwards, and inoculation of the secretion at once showed that this wound had, through the medium of the lint, or the water, or sponge (it was impossible to say which), become inoculated with virus from another source, for the patient himself presented no primary affection; in this case the instruments could not have been the source, as they were new, and had not been previously used. This case should put the surgeon on his guard; and in venereal hospitals the greatest attention must be paid to cleanliness; this, however, is not always possible, in consequence of the habitual carelessness of the attendants.

THE NECESSARY CONDITIONS OF THE PARTS ABOUT TO BE CONTAMINATED.—For the production of artificial chancres *on the skin*, we have already stated that it is necessary to introduce the virus beneath the *epidermis*, and we may add that an abrasion of that structure is always necessary for the action of the poison. In practice, we find that chancre follows abrasions, excoriations, fissures, incisions, leech-bites, wounds, scratches, &c.; hence results that variety in shape which the sore may assume; around the rectum we observe those ragged fissures which have no analogy with the circular chancre described by Hunter. We have lately seen a chancre on the thumb of

an individual, having the shape of an ordinary small incised wound ; he stated, that in following his occupation as a tanner he cut his hand ; he slept soon afterwards with a prostitute ; the cut surface became inflamed, and the patient was unable to cure it with his usual remedy,—namely, bathing the hand in the tan-pits.

Age.—The previous considerations will at once explain why the animal economy is more liable to chancre at one period of life than another ; thus the delicate skin of the infant, as well as its greater vitality, render infection (*cæteris paribus*) more probable than at any other period of life ; on the contrary, the dry and shrivelled condition of the tegumentary covering in the decline of life, causes chancre to be comparatively rare. We find, moreover, that absorption is sluggish, and the chances of exposure to the virus are less than at the age of puberty, when the passions of youth, and a carelessness of consequences, lead to such frequent exposure.

Sex.—We may mention the influence of *sex* as a predisposing cause : the female exposes herself less than the male, and consequently is less frequently the subject of syphilis ; but even when, as in the case of prostitutes, the female exposes herself to contagion, we still find chancre less frequent : this depends upon the structure of the female genital organs, which are not so liable to abrasions as the male, and are freely lubricated with mucus, and thus shielded from the action of the virus.

To show that chancrous matter may be applied to a sound mucous membrane with impunity, M. Cullerier made the following conclusive experiment :—A female entered the Lourcine Hospital with three or four sores in each groin. An examination with the speculum showed that there was no ulceration of the vagina. After some days M. Cullerier took some of the matter from the bubo on a spatula, and placed it on the vagina. He allowed the woman to walk about for thirty-five minutes, and watched her to see that she did not attempt to remove the virus (I should mention that the female was unaware any experiment had been made upon her). The thigh was then inoculated with some of the secretion which had been placed on the vagina thirty-five minutes before. The vagina was carefully washed out with alum and water, and the parts carefully wiped dry. In forty-eight hours the characteristic pustule had appeared on the inoculated point, and the next morning it was destroyed with caustic. No effect was produced on the vagina, and the patient two months later went out perfectly well. The experiment was repeated on a second woman with exactly the same result. (See *L'Union Médicale*, tome iv. p. 197.)

For the production of chancre on *mucous membranes*, the same principle holds good ; there must be a lesion of continuity of the epithelium, otherwise the virus will have no effect. There is an apparent exception to this law, but closer observation shows that it is not a real one. The virus may insinuate itself into a mucous or sebaceous follicle, and having destroyed its lining by a species of irritation, comes in contact with the cellular tissue, and then a pustule or abscess is formed. When situated in a little mucous follicle, the virus may remain inactive for some days, in consequence of being surrounded by

the cyst; the virus is then in the same condition as when enclosed in bottles; the cyst becoming corroded by the action of the virus, this latter acts directly, and explains some cases of supposed incubation. As noticed above (page 277,) the virus may pass along a hair-bulb, and thus enter the system, producing, however, there its primary local effects.

I have not met with a single case which would seem to contradict the general law, that abrasion of the epithelium or epidermis is necessary for the action of the virus. Some authors differ from this opinion, considering that simple contact of the skin and virus is sufficient alone for the development of a chancre. In these last cases, the virus might probably act as an irritant or escharotic, and destroy the surface; the virus would then come in contact with the cellular tissue, and such cases, far from contradicting, prove the proposition we have above laid down. There are other cases which, interpreted in a different manner, might lead to the supposition that syphilis may be introduced into the system without any abrasion of surface. Chancre may heal in a few days, as we have elsewhere stated; the virus may introduce itself into a follicle or point of the skin, and the follicle become closed, or the point by which it was introduced perfectly heal in a short time; in none of these cases will abrasion of surface be apparent, yet chancre will appear, and give rise to the opinion that lesion of continuity is not necessary.

ARE THERE ANY PERSONS NOT SUSCEPTIBLE OF CHANCRE?—If we choose to depend upon the opinion of some authors, as well as men of the world, there exist certain privileged beings who are not susceptible of syphilis.

It is a fact, that *some few* persons do pass through life without contracting chancre, although they have exposed themselves to contagion. Such persons were probably never subject to the necessary conditions we have just spoken of; the virus did not remain long enough on the epidermis to destroy it and act on the cellular tissue below. If it be the case of a female, the vagina was probably coated with thick mucus, which prevented the contact of the virus, or it was inflamed; and experience shows that an inflamed and secreting surface will take on with difficulty the specific action of chancre; the same occurs on a blistered surface, the secretion appears to wash the virus away. If, then, any part covered with a perfectly healthy and compact epidermis be exposed to contagion, why should we be surprised at finding it unaffected?

Parts, then, that are liable to abrasions are those most liable to chancres, hence it is that chancres are found most frequently at the inferior commissure of the vulva, at the frenum, and at the orifice of a narrow prepuce. A healthy or unabraded skin fortunately resists the action of the virus, or the fingers of a surgeon might become inoculated in touching the thousand chancres he has to treat.

I cannot, for the reasons given above, agree with those who believe that there are individuals who resist the action of chancre, and indeed I would undertake to produce a genuine chancre on any individual who will submit to inoculation.

When the virus is taken from such a sore transmitted by means of such agents mentioned, and brought into contact with such tissues as are above described, the effects will be regular and constant, and the

point of the skin with which the virus comes in contact will be the seat of the chancre; its development will, moreover, as seen in Plate V. Fig. 2, *a, b, c*, begin immediately, so that no incubation can be said to occur. In practice, however, cases happen which apparently point to the existence of incubation. Patients sometimes state that a chancre has only existed a week, and yet they have not exposed themselves to contagion for a month previously. Here the patient makes a wrong statement, although without any intention of deceiving the surgeon; for on closer examination it will be often found that he has, from inadvertence or other cause, never examined the affected part since the time of exposure to contagion, until the period when pain or some other symptom first called his attention to the chancre. In such a case it would be perhaps more correct to say that he observed the chancre a week ago, than that the sore had only existed for that period. I have often been called on to treat bubo, or even secondary symptoms, in a patient who, on being interrogated, affirmed he had never had primary sores, yet, on uncovering the glans, sores have appeared which he had never observed, inasmuch as they had given rise to no inconvenience.

DOES THE VIRUS ACT DIRECTLY?—There are, occasionally, cases which are brought forward to prove, and which at first sight seem to indicate, incubation. Persons expose themselves to contagion; they wash carefully the parts exposed, they examine day by day, to see if chancres are produced. When several days have elapsed, they observe certain suspicious-looking pimples; here, however, we may naturally suppose that the virus has entered, during coition, the mucous or sebaceous follicle, and lies there inert until, by the irritation it produces, destruction of the lining membrane takes place; it is then placed under conditions most favourable for its development; very probably this often occurs in urethral chancre, as experience shows that a secretion from the canal rarely occurs before the fifteenth day.

PROBABLE MODE OF ACTION.—Far from believing, then, in the existence of incubation, properly so called, we consider that immediately the morbid poison comes in contact with the cellular tissue a local action is set up, by which “it (the virus) converts into its own likeness those appropriate materials of the blood which come in contact with it; but this action is apparently limited, and at last arrested and reversed, by a disposition inherent in the virus to enter into some new union, or to reciprocate some new modification with other ingredients of the blood; by which union or modification it attains a second form, wherein (whether by addition or by subtraction of matter) it comes to possess new qualities;—*solubility*, which it had not before, and an *inability to propagate itself by inoculation* from the surfaces at which (judging by analogy) we may suppose that it discharges itself. In becoming a true blood-disease it ceases to be communicable except by what is equivalent to transfusion of blood.”*

The foregoing conclusions on the subject of inoculation of syphilitic

* Simon's “Lectures on Pathology,” p. 266. A book which furnishes a very able summary on all that is at present known on the action of morbid poisons.

virus have met with much opposition in France ; and among others, M. Bousquet, who has given much attention to the subject of variola, is impressed with the idea, that the first effect of the syphilitic virus on the system is general, similar, as he states, to that of the vaccine virus, and not local, as we believe. Now, supposing the primary effect of vaccine virus on the system to be such as M. Bousquet asserts (which, as seen by the late Dr. Gregory's note,* is not gene-

"6, Camden Square, Camden Town, Dec. 31, 1850.

"DEAR SIR,—You have submitted to me certain opinions entertained by M. Ricord and M. Bousquet, on the subject of the imbibition or reception of morbid poison, particularly on the question, whether '*a nascent chancre is at its outset a purely local disease*'?

"M. Bousquet, I believe, contends, in opposition to M. Ricord, '*that chancre is not necessarily a local complaint*,' and he likens its action to that of the vaccine virus, which, according to M. Bousquet, '*has first a general effect on the whole system, the local phenomena following this general disturbance*.'

"You ask my opinion on the question at issue between M. Ricord and M. Bousquet. You ask me, '*whether, in my opinion, the vaccine matter acts generally before producing its local manifestation*'?

"I will attempt to make the matter clear to you.

"M. Bousquet is perfectly correct in his opinion, that '*the local manifestation bears a certain relation to the condition of the general system*;' but in my judgment he is wrong in saying, that the vaccine virus acts on the general system *first*, and produces its local manifestations *afterwards*.

"The action of the vaccine virus is purely *local*. It commences the very *instant* that the virus comes in contact with the wounded chorion. From that moment a now and specific action of vessels is set up, the further advances of which are controlled and regulated by the previously-existing condition of body. The error of M. Bousquet is perhaps, after all, more in the mode of expressing his thought than in the thought itself. We probably both mean the same thing. In my view it is not the virus that acts on the general system. It is the general condition of the frame which acts on, or more correctly, influences the action of, the vessels when touched by the vaccine virus. It would be nearer the truth to say that the prior condition of the frame affects the vaccine virus. Neither expression, however, is correct. The proposition, duly enunciated, would read as follows:—The vessels, irritated by the contact of the vaccine virus, instantly take on an action, which action is controlled, influenced, modified, and governed by the prior condition of the frame.

"When the healthy *infantile* arm is punctured in vaccination, the action of the vessels is slow, steady, and uniform, and the result we call '*perfect vesicles*.'

"When a youth of fourteen, well vaccinated in infancy, is re-vaccinated, the action taken on by the wounded vessels of the arm is hurried, unsteady, and irregular. The offending matter is ejected from the body by a rapid process of common inflammation.

"If a child be vaccinated whose blood has been already tainted by small-pox received naturally, then, in most cases, the action of the wounded vessels progresses as under the common case of *infantile* vaccination. The process is slow and steady ; pure vaccine vesicles are developed, and these vaccine vesicles give forth a lymph which will serve to *vaccinate* others, even though the rest of the body be covered with variolous pustules.

"This latter case is an *experimentum crucis*. It cannot be contended that here the vaccine virus '*has had any general effect on the whole system, prior to developing its local manifestations*,' for the system was preoccupied by variola. Yet the local manifestations are *identical* with those which show themselves where the system is not so preoccupied.

"When a child is vaccinated whose system is preoccupied by the rubeolous poison, the vaccine virus occasions an *incipient* action in the wounded vessels, but the action does not progress and complete itself till after the subsidence of the rubeolous tumult.

"The same principle is displayed in operation, when you *variolate* a young lad of fourteen, who had been well vaccinated in infancy. The local injury being received,

rally admitted), it by no means follows that other morbid poisons act in the same way ; on the contrary, everything tends to prove that each morbid poison has laws of its own ; the very valuable remarks of Dr. Gregory clearly show what those of the vaccine virus are. Recent observations at the Veterinary College at Alfort, in France, on the subject of the inoculation of glanders, place this subject in so clear a light that I shall append them.

M. Rinault found that when he inoculated horses with acute glanders, and incised and cauterized the surrounding part one hour after the inoculation, the animal subsequently died of glanders ; showing the rapidity with which absorption takes place.

Similar experiments made with the sheep-pox virus proved that in less than five minutes absorption had taken place, when the poison had been brought in contact with any absorbent surface of the skin. —(*Recueil de Médecine Vétérinaire*, 1849.)

We must therefore again repeat that syphilitic virus produces its special effects on the human system ; these effects may be in many respects similar, but by no means identical with those of other morbid poisons ; it has its own special laws, which we have attempted to demonstrate, as a knowledge of them is most important in practice, and will assist greatly in unravelling many of those mysteries which are supposed to hang round the subject of this work.

IS THERE ONLY ONE VIRUS, OR ARE THERE A PLURALITY ?—As to the deductions which should be drawn from the recorded clinical observations on this question, there is at present considerable difference of opinion. Before discussing the various theories which

and the condition of the frame being *anti-variolous*, the newly introduced poison is ejected from the system by a rapid process of inflammation and suppuration, just as a thorn or a swan-shot would be ejected. But the swan-shot does not *act* on the general constitution before the development of inflammation ; neither does the variolous poison so act. The condition of the frame *regulates* the action of the vessel, and the condition was equally present before the skin was wounded. *The virus, then, acts locally on vessels in a particular condition of vitality.*

"This pathological inquiry has been unnecessarily complicated by the question, whether the morbid matter (be it chancre, be it vaccine) is actually *absorbed*, bodily, into the system.

"The latter question is a purely speculative one, nor do I know how we can ever arrive at its solution. The theory of '*absorption of morbid matter*' is not requisite to explain the phenomena. The development of the vaccine pustule is not prevented by the most profuse bleeding of the wounded vessels. It is not prevented by the use of the cupping-glass applied over the wounded surface. It is not prevented by the most diligent ablation.

"The vessels having been once touched by the most minute homœopathic fraction of a drop of pure vaccine virus, the process *must go on* ; nothing can stop it but the destruction of the part or the death of the child.

"I have thus endeavoured to show you what is the mode (so far as is known to us) in which the vaccine virus acts on the human body. You see how the phenomena are influenced by the prior condition of the constitution. But it surely cannot be said, with any reason, that '*the vaccine virus has a general effect on the whole system before producing its local manifestations*' (such is the expression of M. Bousquet). The vaccine virus cannot *act on* that, or influence that which existed previously. The prior condition of the system, and consequently of the vessels of the arm (constituting a portion of the general system), influences the *course* of the vaccine disease, but the action of the virus itself is *local*.

♦
"To W. Acton, Esq.

"Believe me, very truly yours,
"GEORGE GREGORY."

have been propounded, it will be well to mention some of the observed facts.

EXPERIMENTAL INQUIRY.—We have, in the preceding pages, spoken of one cause alone, and the conditions necessary for the action of that cause; and we have spoken of it as constant in its effects when placed under the proper conditions for its development. If syphilitic virus always followed the simple course above alluded to, chancre would be a very simple disease. But experience and experiments oblige us to acknowledge, that, although we meet with simple cases, the majority present complications that are quite sufficient to account for the contradictory statements and opinions which have existed on the subject.

If syphilitic virus be taken from a sore that has been much irritated by any local circumstances, the pustule may go through all the regular phases, provided the inoculated point be kept quiet. This is well exemplified in Observation I. Plate I. of M. Ricord's valuable "*Clinique Iconographique*;" as the learned professor observes, "this fact (namely, the regular progress of the inoculation) is very remarkable, inasmuch as it shows that an erysipelatous state of the genital organs is but the local result of ill-treatment suffered previous to the entrance of the patient into the hospital."

If the reader will turn to Observation III. Plate III. of the above-mentioned work, he will observe the irregular results of inoculation delineated. A patient came into hospital with chancres of the glans and prepuce, complicated with phimosis and acute inflammation, following a two days' march and a free indulgence in spirits. Instead of going through the natural phases, the inoculated point in half an hour seemed to have taken on a more active course than usual. In twenty-four hours, under the influence of the general excitement, a pustule had formed, in the centre of which a dark-brown spot was observed, indicating that already partial mortification had commenced. At this period, likewise, superficial gangrene had attacked the sores on the prepuce, from which the virus was taken. At the end of the thirtieth hour after inoculation the brown spot which occupied the centre of the inoculated pustule had become of a perfectly dark colour; the epidermis, which had been raised up by the accumulation of the pus, presenting a greyish hue. At the forty-eighth hour the pustule and its effects had extended perceptibly. On the third morning similar progress; the central eschar of the pustule was observed to be less elevated than the surrounding parts. On the fourth morning the pustule was observed torn across in several places, but the centre was adherent. On the fifth day, at ten o'clock in the morning, the black scab covering the ulcer produced by the inoculation was removed, and the skin alone was seen to be compromised; there was but little burrowing under it, and the bottom of the sore presented a pink appearance, interspersed with yellow points, and the patient rapidly recovered.

Let it be remembered that these patients, during the course of the experiments, were confined to bed, and every attention paid to their diet and cleanliness; so here again we see the simple course of a *variety* of chancre. I could enlarge greatly on this subject, and detail

a vast number of experiments which might be very interesting, but which all go to prove what surgeons are otherwise well aware of—namely, that chancres *on the same individual* usually present similar physical characters: thus an indurated chancre and a sloughing phagedenic sore are not met with on the same patient, and that if several chancres exist, they are usually all either simple, indurated, phagedenic, &c. We say usually, for when the situation of a sore causes it to put on a peculiar aspect, of course the inoculated point on the thigh, not influenced by similar causes, will not exactly resemble the sore whence it was derived.

Until recently—viz., within the last four years, we did not absolutely know what effect different sorts of sores would have upon different constitutions. Now, however, the various experiments that have been made in studying syphilization,—the care that has been sometimes taken to discover the particular woman from whom the chancres have been communicated,—and the large numbers of such cases that have been recorded, have enabled us to lay down some tolerably certain rules, as for instance, the general principle that—

Simple Sores produce Simple Sores.—Ricord says, “Up to the present time, I have always found on the person who has transmitted the contagion the same form and nature of chancre.”

Supposing the person to be healthy, a soft chancre will produce a soft chancre on another individual. In thirty-nine cases of simple chancres, MM. Fournier and Caby have taken the trouble to investigate the source of contagion, and in thirty-nine instances they found the original and transmitted sores absolutely similar in form and nature.

Occasionally it has happened that these gentlemen have had collected in the hospital a number of patients who had contracted the infection from the same source; in these cases they have invariably found a close resemblance between the chancres on the different patients and the originating sore.* Another general principle is that—

Indurated Chancre reproduces Indurated Chancre.—In fifty-nine instances collected by M. Ricord's Interne, and confirmed by him as well as by his colleagues, it appears that the origin of indurated chancre was traced to indurated chancre, *at least when the contagion was transmitted to a constitution that had not been previously affected with constitutional syphilis.*

Observation and experiment have, however, shown that these general principles are subject to the following qualifications:—

1st. Although indurated chancre will produce an indurated chancre in a person who has never had constitutional syphilis, yet it will produce a *soft* chancre, provided the recipient have already on a former occasion had an indurated chancre followed by secondary symptoms.

* Although these gentlemen, experimenting on a large scale, have come to these conclusions, they are opposed to what I have occasionally met with in practice. The celebrated case of the Portuguese opera girl, related by Fergusson, is also an instance to the contrary. So is the case recorded by Vidal de Cassis, who took the secretion of an unindurated sore, inoculated a pupil, and found that the inoculation assumed the indurated character. So also are the experiments related in the next paragraph of the text, showing that, though this may be a general law, it admits of many exceptions.

2nd. This *soft* chancre if communicated to a third person who has never had syphilis, will again appear as an *indurated* chancre, although it appeared only as a soft chancre in the second person. (See Ricord on "Chancre," pages 173, 200, 203.) It seems quite clear, indeed, that indurated chancre does not arise from a distinct virus. It is (to employ an expression of M. Ricord's), the fruit of a *seed*, the produce of which will depend upon the ground it falls upon. In my own opinion, these experiments, repeated over and over again by M. Ricord and his school, have placed the question beyond a doubt. Even where this soft chancre produces a soft chancre (see above, page 290), it is probable the patient has acquired the syphilitic diathesis from parents, or in other ways.

3rd. An indurated chancre followed by secondary symptoms, may produce seriginous chancres unattended with secondary symptoms; a case of this kind is quoted by M. Melchior Robert, p. 178.

A singular case has also occurred, in which, of three men who had connexion with the same woman, two contracted indurated chancres with secondary symptoms, and one phagedenic chancre without secondary symptoms.

DIFFERENT THEORIES ON THE SUBJECT.—Hunter and his school believed that there was only one virus. His pupils admitted that it might be modified by difference in constitution, temperament, sex, idiosyncrasy, &c., and thus accounted for its different effects upon different individuals.

Carmichael of Dublin proposed a division into four poisons, each of which, he asserted, produced a different constitutional affection. This view has not stood its ground against clinical investigation. Ricord some twenty-five years ago advanced the doctrine, though with some hesitation, that the different constitutional symptoms following chancre, depended not only on individual conditions, but possibly on *intrinsic difference of virus*.

M. Bassereau, one of his pupils, has since further developed these views. In his opinion, chancreous matter is not a unity, it is a compound production, belonging to two distinct pathological species. Of these two species one is *simple chancre, the contagious soft chancre of the genital organs*, known and described by the ancient writers, Celsus, Galen, and others. The other is the *infecting chancre* the initial symptom of an affection of a new origin—namely, syphilis, *indurated chancre*.

In M. Bassereau's opinion, one of these is not able to engender the other,* but are entirely distinct. He believes that the two diseases do not arise from one seed modified by the soil in which it falls, but from two totally different seeds.

Another pupil of Ricord's, Dr. Clerc, has enunciated another view of the case. Instead of admitting the pathological species of *simple* as distinguished from *infecting* chancre, he considers these as two varieties of the same virus.

According to Dr. Clerc, simple chancre is but a modification of the infecting chancre; it is the result of inoculation of an infecting chancre on a subject already possessing the diathesis, that is to say,

* This point is still in dispute. See experiments, page 290, and page 291.

already subject to the influence of a preceding constitutional syphilis. Each of these chancres, however, in his opinion, is transmitted separately as a distinct pathological species, and the consequences of this second contagion are determined not by individual predisposition, but by the very nature and *species* of the infecting virus.

M. RICORD'S OPINIONS.—During my late visit to Paris, October, 1859, I found M. Ricord's mind not quite yet made up on the identity or difference of the causes of the different forms of chancre. In a late lecture, 1857, he sums up his views in the following cautious language :—

“Gentlemen, the conclusion that you ask of me, I cannot, and I think no person can at present answer ; light is only beginning to be thrown on this important question. Many points (you forget this, perhaps, in drawing your conclusions)—many points, I repeat, remain still doubtful, and require further investigation ; probably the requisite materials for solving this problem are not yet known. We must await then the solution ; *we must pause*.

“Nevertheless, and awaiting the instruction that the future must bring with it, the *unity (unicité)* of the *syphilitic virus* seems to me to be henceforth an established fact ; that syphilis, so to speak, is *one*, and cannot be doubled (*se dedoubler*) or diverge (*se bifurquer*) into two different morbid entities. Supposing even that we shall one of these days come to the conclusion that the two forms of chancre belong to two distinct pathological species, we shall not thereby deny the unity of syphilis. This hypothesis would admit no more than that by the side of syphilis there exists a foreign affection, commencing like it by an initial symptom—a contagious and virulent pus—but differing from the true syphilitic ‘poison’ in not exercising any infecting influence on the economy. We should then conclude, not as has been too lightly done, that the *syphilitic virus* is double, but that there exists a *second venereal or chancreous virus, independent of syphilis*. In other words, we should admit two viri, the one belonging to syphilis and producing the infecting chancre, the other foreign to it and giving rise to simple chancre.

“The duality of the chancreous virus is nothing but an hypothesis which the future must decide upon. The unity (*l'unicité*), of the syphilitic virus is a truth already settled by experience and by time.”

For myself, after carefully weighing the latest facts and arguments upon this obscure subject, I see no reason to change the opinion expressed in former editions of this work, though I have thought it right to insert M. Ricord's* unwontedly dubious remarks. My opinion is still, as I have stated above, that there is but one virus, which is modified in its action by the idiosyncrasies or diathesis of the constitution into which it is introduced. I am not satisfied with the evidence on which the duality of the chancreous virus is based. Supposing there are two viri, many unanswerable questions arise. According to the experimenters in France, page 290, they are distinct

* I may venture to say that in both Paris and Brussels I heard from many of M. Ricord's friends and admirers, including even his colleagues at the Hôpital du Midi, expressions of regret that he should have even partially sanctioned these now views.

in their action. But have these viri never been brought into contact in actual practice? Has a man with a soft chancre never had connexion with a woman suffering from a hard one, or *vice versa*? What is the result of this which must have been a daily admixture? Is there a *tertium quid*? If so, what will it produce? What has it produced? Even if two distinct viri ever did exist, they must have been, and must now continue amalgamated; and if so, how can we distinguish at this stage the differences between them. A long series of very careful experiments alone can solve these difficulties. But whatever theoretical view we take, our practice will not be affected; for, as will appear in subsequent pages, the treatment of the soft and the indurated chancre is as different as it is possible to be—the latter requiring mercury, and the former not.

INOCULATION CONSIDERED IN REFERENCE TO ITS OBJECTS.—Every candid observer must admit that inoculation has rendered infinite service to science, and the thanks of the whole community are largely due to M. Ricord, not only for performing that long series of experiments recorded in his "*Traité Pratique sur l'Inoculation*," but for drawing those important deductions we have mentioned. Inoculation, however, like many other useful agents, is a very dangerous weapon in the hands of the unskilful. Twenty years ago, in the pages of the *Lancet* (vol. i. 1839-40), I introduced the subject of inoculation to the attention of its readers, and in pointing out the advantages of the practice, noticed at some length the inconveniences to which it was liable. I regret to say that similar remarks are nearly as necessary now as they were then. Scarcely a month passes but patients are brought to me on whom I see the evil results of inoculation when employed for purposes which are quite useless, or only from idle curiosity. This particularly happens in the case of medical students experimenting on themselves.

AFTER-TREATMENT OF THE ARTIFICIAL SORE.—Inoculation is a very simple process, and is attended with no ill consequences, if the sore from which the virus be taken is a simple one, and the patient be confined to bed, as happens in the wards of an hospital. On the third or fifth day, when the surgeon has gained all the information he wants—namely, whether the sore from which the virus is taken be a true chancre, let the little pustules be opened with a lancet, the pus carefully and effectually removed by lint rolled into a point, then let the little cavity be filled with Vienna paste, composed of five parts of caustic lime and six of caustic potash, or the paste composed of sulphuric acid and charcoal described at page 305; a watch-glass may be placed on this to protect it, or, when dry, a piece of strapping; an eschar forms, and when this comes away, the structures beneath are seen perfectly healed, or a very small healthy wound remains, which cicatrizes most rapidly; in all these cases, however, the patient should neither take violent exercise, nor commit excesses.

CASES IN WHICH INOCULATION IS JUSTIFIABLE are the following. A clinical lecturer is anxious to show his pupils the natural course of syphilis and the laws of that poison; by taking the precautions above alluded to, he may do so with great benefit to his class, and without

the slightest detriment to the patient's health ; in fact, the inoculated point will be generally healed before the original sore ; the local mischief will not be increased ; bubo is not more frequent ; and, lastly, constitutional symptoms are not to be feared any more because a patient has had two sores, than if he had only one ; experience having clearly shown, and, as I shall demonstrate at a later period, that secondary symptoms in no way depend on the number of sores on a patient.

When the urethra discharges a small quantity of thin sanious secretion, or if the surgeon has reason to suspect an urethral chancre, inoculation is not only justifiable, but absolutely necessary, in order to know how properly to treat the case ; for if urethral chancre exists, as not unfrequently happens, all the anti-blennorrhagics in the Pharmacopœia will be of no avail.

In many medico-legal inquiries I would suggest inoculation to the surgeon, before giving an opinion on the nature of a sore. Before going into a witness-box, it is impossible to say what inquiries may not be made, and a clever counsel might be able to make a strong case unless this were done.

In instances of suspicion, or where unhealthy-looking sores occur in unusual places, and resist ordinary treatment, I never have any hesitation in inoculating a patient.* The two following instances will suffice to show that cases requiring it occur. "On the 27th of Feb. 1838, a man presented himself at the out-patient room, complaining of chancre at the root of the penis, and accidentally, as it were, showed M. Ricord a sore on the frænum of the tongue. The character of it was sufficient at once to arouse some suspicion as to its nature, and this patient was immediately admitted. Inoculation of the secretion on the sore in the mouth was made, and a characteristic pustule followed. All doubt was soon removed, and the avowal of the patient additionally proved that this was a primitive syphilitic ulceration."

"A woman at the Female Venereal Hospital presented ulcerations around the rectum, *the genital organs being in a healthy state*. Here as in the former case, inoculation proved that the sores were primitive ones, and it was the cause of the avowal of the patient as to the manner in which they had been contracted, after every other means had failed of obtaining a confession. Without inoculation, it would have been impossible to have arrived at a correct knowledge of the

* M. Ricord, in excising the edges of a primary sore with a curved pair of scissors, wounded himself in the thumb of the left hand. An ill-conditioned wound followed. To decide its nature, he inoculated himself, and produced the characteristic pustule.—(*Bulletin de l'Académie Royale de Médecine*, tom. ix. p. 142.)

Dr. M'Carthy, in his "Thesis," says, p. 13, "During the years 1842 and 43, I had occasion to observe a great number of primary ulcers situated on parts of the body where they are not usually met with.

On the nostril . . .	1	On the umbilicus . . .	2
gums . . .	1	scrotum . . .	2
tongue . . .	1	anus . . .	15
lips . . .	3	urethra . . .	17
chin . . .	2	thigh . . .	3"
hand . . .	4		

cause of the ulcerations on the leg, the history of which is detailed under the head of 'Diagnosis of Chancre, page 299.

From what I have witnessed in practice, I would advise no surgeon to give his opinion on ulcers of nurses' nipples which are supposed to have given rise to syphilis in children, or *vice versa*, without employing inoculation. Great mistakes are frequently made in the diagnosis of these affections, and inoculation is often the only means by which we can clear up the more obscure cases.

CASES IN WHICH INOCULATION OUGHT NOT TO BE EMPLOYED.—It appears to be pretty generally acknowledged by all, that the younger members of our profession devote themselves as martyrs to science more than any other class of men. We have been accused of torturing animals unnecessarily, in order to investigate Nature's secrets; and the public sometimes asserts that public institutions are nothing but tolerated places where experiments are followed out on a large scale on the poor patients; but I should say that the junior branches of the profession lose no opportunity of experimenting on themselves or their comrades in a way that even science cannot sanction.

The following case is frequently coming under my notice: a student, during his first year's studies, unhappily contracts a sore from a party he has the greatest reliance on; to vindicate her fidelity, and prove to his comrades, or the surgeon he consults, that all their suspicions are incorrect, he inoculates himself on the thigh, attends to his usual avocations, and takes no precautions; in a week the sore on the genital organs has increased, and, in addition, he has a spreading sore on the thigh.

It is a very prevalent notion, that inoculation is a valuable means of deciding whether mercury should be given. Now M. Ricord, the modern regenerator of inoculation, has never advanced that the process is of any use in deciding this matter. Whether a sore produces a characteristic pustule or not when inoculated, causes us in no respect to vary the treatment; the giving or withholding mercury will depend upon totally different reasons, as will be stated in the proper place. No greater error can be committed than to judge of this by the result of inoculation. I mention it here, because some leading surgeons in London labour under this false impression.

Inoculation must never under any circumstances be employed in gangrenous or serpiginous sores (a subject to be alluded to presently,) on the ground that as almost all sores on the same individual will take on a similar action, the surgeon will have to treat two intractable sores instead of one, which may last for years; besides, in such cases there can be no doubtful question to decide, and inoculation, if performed, is of no avail. In the *Lancet*, vol. i. for 1839-40, will be found instances of the deplorable effects of such a mistake; and M. Ricord, in Plate III. of his "Iconographique," gives a drawing to the same effect.

Lastly, the young surgeon must recollect that in testing a sore by inoculation, to ascertain if it is syphilitic or not, the test is only of value when the sore is specific or progressive.

THE DIAGNOSIS OF CHANCRE.—When we see a sore situated on the penis, circular in shape, with the bottom grey, rugous, velvety, or covered with an adherent pseudo-membranous layer; with the edges sharply cut and undermined; with a rusty-coloured or bloody discharge; with a violet areola at the edges; and increasing in size, very little doubt can exist that it is a chancre. But none of these characteristics, whether apart or together, absolutely prove the specific nature of the sore. It may, therefore, be interesting to consider the subject practically, and allude to cases in which difficulties present themselves. Suppose a case to be brought under our observation at its origin; for example, we are consulted for a pustule, a small abscess, or an excoriation, such as is seen in Plate V. Fig. 1, Fig. 4. How is a correct diagnosis to be formed in this case? A rational diagnosis may often be founded on the *appearance, situation, history, and course* of this stage of chancre, but it must be borne in mind, that such an opinion can be only conjectural. The value to be attached to each circumstance we shall consider in detail.

The Appearance.—A primary sore presents very striking characteristics, and there are many surgeons who rely much upon the appearance in forming an opinion of the nature of an ulcer. But though a primary syphilitic sore has generally a peculiar physiognomy, still it is incontestable that other sores, not of a specific nature, may assume all the aspect of real chancres. If, for instance, a piece of corrosive sublimate be placed between the glans and the prepuce, a sore, in every physical characteristic resembling chancre, will follow; hence we conclude that the appearance of a chancre is only of relative value in the diagnosis. Still there is a honeycombed appearance of chancre sometimes present, which is very characteristic.

Although, however, the primary sore usually assumes the characters above mentioned, it is no less true that in some few instances it presents no peculiar features, yet it is notwithstanding a chancre. Thus, then, I conclude that the mere presence or absence of certain appearances cannot alone enable us to decide upon its nature.

The Situation.—As inoculation has proved that chancres may occur on any part of the skin or mucous membrane, the mere situation of a sore will in no way assist our diagnosis, unless as urging us to examine more carefully those parts which are most likely to conceal ulcers from our view, such as the deep portions of the vagina, uterus, urethra, rectum, mouth, &c.

The History of the Sore.—If there is any one circumstance which has led, or leads, surgeons frequently to form a false diagnosis, it is the history. Thus, supposing that a patient avows that he has exposed himself to infection, and a sore follows, the simple fact of exposure only gives presumptive evidence that a sore is syphilitic, inasmuch as this sore may have been produced by simple irritation, or by abrasion. It is not sufficient to know that connexion has preceded, but it is likewise necessary that a reasonable time only has elapsed between the act of coition and the real, not the reputed, appearance of the sore.

The surgeon, on the other hand, must not be deterred from believ-

ing a sore syphilitic, because the patient denies the possibility or having contracted a chancre ; such a mere *ipse dixit* is of no value alone unless backed with other corroborative evidence.

The following is an example of a kind of case that might easily mislead, from its somewhat suspicious history :—

In 1853, M. F., a gentleman in large general practice, came to me in great alarm, and showed me several ulcers and pimples on his right hand. He stated that he had delivered a woman with instruments, and injured his thumb, had then applied a poultice, and the present appearances followed. The case presented some doubtful points, but I attributed the affection to an epidemic of boils then existing, and recommended great cleanliness, keeping the parts dry by means of violet powder, with strict attention to diet and the administration of tonics. Under this treatment the case got rapidly and permanently well.

The history, in short, like the situation, aspect, &c., is, alone, insufficient to found a diagnosis on ; but if it is deceitful when the patient is desirous of telling the truth, how often may the surgeon be misled when the patient has reason for concealing his antecedents ! From the female it is next to impossible ever to attain the truth. The irritation of the menses, or some other cause, is alleged to explain the ulcerations about the genital organs. We have mentioned at p. 294, the case of a female who suffered under ulcerations around the rectum, yet at first strenuously denied that they could possibly be syphilitic ; until obliged by inoculation to admit the fact. We might cite numerous cases to prove that reliance cannot be placed on the history of patients as recounted by themselves.

The Shape of a sore has been cited by some authors as a diagnostic mark of syphilis, and it is true that a chancre has more or less a circular or oval form ; but this it possesses in common with many other ulcers, particularly those resulting from herpes. And chancrous ulcerations may be linear, particularly those situated at the orifice of the prepuce or at the margin of the rectum.

Various Complications.—It may be said that bubo occurring with sores is *prima facie* evidence of their being syphilitic. But we should recollect that any simple irritation in scrofulous habits will give rise to buboes, and perhaps such are more difficult to treat than any others. Similar observations may be made on other complications. In fine, we may state, that the glandular complications, when present, can only furnish a rational diagnosis.

The Course.—It has been remarked that chancre has little tendency to heal, but, on the contrary, to gradually progress ; this is, however, a characteristic not peculiar to chancres.

In 1857, a country practitioner consulted me on account of a sore throat, which had troubled him for some time, and gave the following history of his case. Some months before he had examined with the finger a female who suffered under some severe uterine affection, and discovered “a hard ulcerated mass” (the speculum was not employed, so he could give me no further account of the disease.) He told me the woman was respectable and a person beyond suspicion. He was not

aware of any abrasion on his finger at the time of the digital examination, but shortly afterwards he observed an ugly ulcer at the root of his nail; he showed it to several local practitioners, who at first thought it a common sore and treated it with simple remedies. As the ulcer progressed these gentlemen came to the conclusion that it must be syphilitic, and he was recommended to take mercury, and did so till salivation ensued. The sore healed, and the diagnosis was accordingly supposed to have been correct. His health, however, began to fail, his constitution broke down, and sore throat came on; it was at this period I saw him. The conclusion I arrived at was that the disease had not been syphilitic, and that he was suffering from hard work and ill health, aggravated by mercury. I prescribed tonics and sea air. I have seen numerous similar instances, showing how easy it is to make a wrong diagnosis, and how serious its consequences may be.

In a recent lecture of M. Ricord he thus gives the diagnosis of chancre:—

“A simple chancre is a sore, the base of which remains soft or only presents an inflammatory thickening; it does not generally react on the inguinal glands. If it does, it only influences them in a special manner, by inducing an acute inflammatory affection, implicating one gland only, almost inevitably causing suppuration, and frequently producing an inoculable pus. The ulcer has sharply defined edges, and an irregular and rugose base. It is generally soon followed by other ulcers by means of inoculation. It is the sore that (*par excellence*) secretes virulent and contagious pus, preserving for the longest time its specific characteristics. Lastly, it has a destructive tendency, and presents that form of ulceration which most frequently assumes the phagedenic character.”

There are various sores which, in scrofulous and scorbutic constitutions rapidly spread, and very slowly heal. On the other hand, some true syphilitic sores heal in twenty hours; but it is no less certain, that although such exist, they are of rare occurrence.

Before quitting the subject of diagnosis, I must say a few words on *cancer*; these two affections have some points of analogy, as they may exist on the same portion of the body; and it may assist the surgeon, if he recollect that happily cancer is a very rare disease, its progress is very slow, glands in the groin become affected late in the disease, and the symptoms aggravated in proportion to the duration of the complaint; exposure to contagion may or may not have occurred.

In a very severe case of *warts*, which I treated with Vienna paste, in a gentleman from the country, ulcerations followed the cauterization; and these ulcers had a great tendency to remain in *statu quo*, although they ultimately healed. In this instance I had great fear that the ulcers, which exactly resembled chancres, might have become inoculated by some inadvertency, or that they would degenerate into cancer. I mention the circumstance to show the difficulty of diagnosis in some cases, which time alone can clear up unless we employ inoculation. In obscure cases, and when it is absolutely necessary to decide upon the nature of a sore, more especially in medico-legal inquiries, evidence such as we have mentioned would be insufficient. In the *Gazette des Hôpitaux*, 1847, page 295, M. Ricord says, “The charac-

teristics of chancre consist neither in the situation, form, colour, or induration of the sore, nor in its shape, edges, or duration, nor in any one physical character of the ulceration, which may vary *ad infinitum*. They are; the inoculable pus—and its secretion, being always identical at a given period of the existence of chancre. We may, however, frequently form a rational diagnosis from the appearance of the sore.”

The chief test is *inoculation*, which, although one of its greatest advocates, I would not unnecessarily employ; it will, however, at once decide the nature of a sore. Here, neither ignorance nor deception on the part of the patient, nor want of experience or observation and deduction on the surgeon's part, will interfere with the conclusion. The accuracy of the test, the reputation of the surgeon, and the certainty of arriving at the truth, will counterbalance all objections to the operation.*

PROGNOSIS.—In the definition of chancre, we have stated that at its commencement it is a local disease, and that it may or may not give rise, under circumstances that will be fully detailed hereafter, to symptoms of general infection. We shall, then, in the following pages, consider the prognosis under two heads:—

* The following case, taken from a paper I read before the Parisian Medical Society, shows the utility of inoculation.

“In the bed No. 10, in the second ward of the Venereal Hospital, lies a patient thirty-two years of age, a shoemaker by trade, of fair complexion. He states that from the age of thirteen till his eighteenth year, he was liable to ulcers on various parts of his body, the cicatrices of which are still visible; from the last-mentioned period he has enjoyed good health. About fifteen months since a bubo appeared, which suppurated and healed in about six weeks.

“About five weeks ago the patient observed a chancre on the prepuce, four days after connexion; soon afterwards several chancres appeared around the corona glandis, and he consulted M. Ricord as an out-patient. During the time he was following the treatment prescribed, a vesicular eruption made its appearance on the inner part of the left leg, which he distinctly remembers having scratched, and from that moment the sores began, and increased in size.

“Present state:—Chancres still exist on the penis, which discharge freely; on the inner part of the left leg there are twelve ulcerations of different sizes, but assuming all the characters of primitive syphilitic sores. Inoculation with the pus of these sores was made, and the characteristic pustule was produced. (See Plate V. Fig. 2, a.)

“This, then, instead of being a case of secondary syphilis, is simply an eczema which was inoculated by the nails of the patient, soiled with the secretion of the primitive sore on the penis.

“A boy, fifteen years of age, of puny stature, lymphatic temperament, and not apparently arrived at the age of puberty, so slightly were the organs of generation developed, entered the seventh ward, suffering under an ulceration of a suspicious character in the left groin. He gave the following account of himself:—

“Had never had connexion with any females, or frequented their society; about three weeks previously the sore appeared on the groin, but it could not be ascertained if it commenced as a bubo or a sore.

“As this sore presented all the character of chancre, except as to its history, inoculation of the secretion was performed, and a well-marked characteristic pustule followed. On these data the boy was interrogated more closely, and M. Ricord then found that he was in the habit of sleeping with a fellow-workman who presented chancres on the penis, some weeks old. Both parties denied any unnatural practices; and whether the virus dropping on the sheets inoculated some scratch previously existing, or whether a scrofulous bubo preceded, which was contaminated with the contagious principle, it is not here my object to inquire; but I cite this case to prove that without inoculation the case would have remained very obscure.”—(*Lancet*, vol. i. 1839-40, p. 354, 533.)

I. The prognosis of chancre as a *local* disease.

II. The prognosis considered in reference to the probability of *general and constitutional infection* or secondary symptoms occurring.

I. *Prognosis of Chancre as a Local Disease.*—In describing simple or artificial chancre, we have mentioned that in a good constitution, it presents a regular course; beginning as a pustule, abscess, or excoriation, it becomes an ulcer; granulations are produced; cicatrization follows, and it heals perfectly without treatment, in a space of time which varies between *three and five weeks*: therefore we may unhesitatingly state that the prognosis of simple chancre is favourable.

In a practical treatise, however, it is not alone sufficient to state these general facts: the surgeon should consider the prognosis under a variety of points of view, for in practice he is daily called upon to decide on the prognosis of this or that form of chancre. It is to facilitate this often difficult task, that we propose devoting the following pages, founded on the observation of a great number of cases.

What will be the probable Duration of the Chancre?—*Simple chancre*, when left alone, usually heals as stated above, in a space of time varying from three to five weeks; when properly treated, perfect cicatrization may be obtained in from eight to ten days; there are, however, circumstances which have great influence in retarding the cure—among others we may mention the *situation*: thus a chancre situated on the frænum, or margin of the prepuce when a natural phymosis exists, will be prevented from healing by the rupture of the cicatrix when erection occurs. Chancres in the urethra, bathed as they constantly are by the urine, or when situated at the margin of the anus, or within it, will be so irritated by the distension of the gut during the passing of fæces, that cicatrization will be often unusually retarded.

In the case of chancres in the urethra, I always advise the application of oil to the sore with a camel-hair brush before micturition, taking the precaution to wash away the oil afterwards.

Other instances might be given to show that the situation of simple chancre must influence the prognosis.

The *Size of Simple Chancre* must necessarily modify our prognosis as to its duration; for a large surface generally requires a longer time to cicatrize than a small one; yet large ulcerations sometimes heal as quickly as small.

The *Number of Chancres* might be supposed to influence the prognosis, yet practice teaches the contrary. Patients presenting several chancres are as speedily cured as those who have but one sore: cicatrization going on with equal rapidity in all. Still we must not lose sight of the fact that the simple soft chancre has a great tendency to secrete virus, which is at any time liable to re-inoculate the patient, thus re-producing sores without end if proper precautions be not taken.

What renders the Occurrence of SUCCESSIVE ACCIDENTS probable?*—

* By successive accidents, we mean such affections as are only a gradual continuation of the same disease; for instance, the production of new chancres, the development of syphilitic buboes or abscesses, from extension of inflammation; and the occurrence of buboes produced by the transport of the syphilitic virus. When—

"Successive accidents," says M. Ricord, in his Treatise on Inoculation, "are a consequence of the extension of the disease (*de proche en proche*), or of a simple extension of the primitive local symptom, as, for instance, the production of new chancres, simple or virulent abscesses, virulent or simple adenitis, &c."

Is a bubo likely to follow? This is a question which the patient suffering from a chancre often asks. Without entering at length into a discussion of all the causes which occasion the development of buboes, we shall here mention such as refer particularly to chancre. The mere existence of a simple chancre does not necessarily cause bubo; in the female, for instance, bubo is rare. We have never seen artificial chancres on the thigh, of the male or female, followed by them. But if chancres on particular parts are seldom followed by buboes, there are likewise other situations which exercise the greatest influence on their formation: it will be found that in every hundred men suffering under bubo, at least eighty have presented chancres around the frænum or inferior part of the glans or prepuce. When bubo occurs in the female, the chancre will most probably be found at or around the meatus. This fact, of situation of the chancre and occurrence of bubo, may be reasonably explained by the connexion which exists between the part primarily affected and the gland, by means of a lymphatic vessel which carries the virus directly to it. And it also proves that the theory of exclusive venous absorption is not tenable: but it seems in accordance with the doctrine of imbibition.

The probability of bubo therefore depends on the situation, not the size or the variety of the chancre; but we shall return to this subject under the head of bubo.

The tendency of buboes to follow chancres situated on or near the frænum further shows how cautious we should be in attributing buboes to this or that treatment; in all such calculations, we should take into consideration the position of the sore.

We may here add, that bubo rarely follows any of the varieties of chancres, unless they be situated in one of these particular spots.

Does the treatment alter the prognosis? A simple uncomplicated chancre will heal without treatment in from three to five weeks; when properly treated, in eight or ten days,—the varieties, by judicious management, in longer or shorter periods, depending upon the causes which give rise to them.

Is the chancre or sore contagious? To this the medical man should answer peremptorily, yes or no. By allowing connexion, let the practitioner remember he is an accomplice, whether he do it through ignorance of the consequences, or out of deference to his patient. Let him remember that a sore which is about to heal, or which has just cicatrized, is very liable, under the slightest irritation, to inflame,

ever, then, the secretion of a chancre is retained in contact with the tissues which secrete it, or comes in contact with such portions of the body as are susceptible of inoculation, we have reason to dread the formation of successive chancres; hence, chancres of the anus, of the prepuce where a natural phymosis exists, or of the *fourchette* in the female, often produce successive accidents. Besides, whenever a solution of continuity in the neighbourhood of a chancre exists, subsequent sores are probable, from contact with the virulent secretion.

ulcerate, and present any of the varieties above described : thus, the patient may, by ignorance or imprudence, lose the virile organ. On the other hand, who will state that a sore which is not perfectly cicatrized is incapable of transmitting the infection ? It should not be forgotten that it is impossible to say how little virus is sufficient to infect an individual ; the edge of a sore which is still unhealed *may* contain the quantum, and the sanction of the surgeon may lead to the greatest misery, as the infant may suffer for its parents' credulity, or the surgeon's ignorance of the laws which regulate the secretion of the virus.

II. *Prognosis considered in reference to the probability of general and constitutional infection, or secondary symptoms.*

It is not our intention here to anticipate the interesting and important particulars to be hereafter detailed under the head of secondary symptoms ; but there are some considerations which so directly relate to chancre and its prognosis, that we shall here consider them.

If it be an undoubted fact that secondary symptoms are a direct consequence of chancre, it is no less certain that they do not follow in every case. The following facts, drawn from observation, may perhaps assist the practitioner in giving an opinion on the greater or less probability of their occurrence.

1. *Stage of the Sore.*—When the chancre has proceeded beyond the vesicular form seen on the third day, we can never guarantee an absolute indemnity from secondary syphilis ; the constitutional symptoms may appear during the ulcerative or reparative stages, provided these last are retarded by any circumstance.

2. *Duration of the Chancre.*—As secondary symptoms are the consequence of chancre, it might be reasonably supposed that the longer it lasts, the more subject is the individual to their occurrence. This, absolutely speaking, is true, and is a reason for locally destroying the sore, which is a constant secreting nidus ; but the practitioner will be wrong to suppose that secondary symptoms only follow chancres which have existed a long time. Experience proves that they attend chancres which have healed (without treatment) in a few days ; and, on the other hand, we have witnessed cases of chancres which have existed eighteen months and two years, without producing these consequences.

3. *The Number and Size.*—The preceding observations apply equally to these circumstances ; it is not on such data as these that we can alone found our appreciation of the prognosis.

4. *Situation of.*—Chancres on any part of the body—viz. on the mouth, finger, penis, or anus, &c., will be followed in an equal proportion by secondary symptoms.

5. *Character of the Sore.*—M. Ricord says, "The simple chancre with a soft base is an affection *purely local*. Its effects are restricted to the region which it attacks. It never infects the system, and is never accompanied with constitutional symptoms." He says further, that this question of prognosis may be determined in the *early stages of the existence of chancre*, and in the *great majority of cases*. There are some few cases which may make the surgeon hesitate, but a practised eye and an educated touch will generally decide if a

chancre be of a simple or an indurated character." Daily experience teaches us that the *serpiginous* and *gangrenous* sore is rarely followed by constitutional symptoms; the *phagedenic diphtheritic* occasionally gives rise to them; *the indurated almost always*. It is well known that Hunter was so imbued with this opinion, that he disbelieved in a sore being syphilitic, unless it presented an indurated base. M. Ricord lays so much stress upon it, that when a patient enters his wards, presenting an indurated chancre of six weeks' duration, and when no secondary symptoms have yet appeared, he often puts him on a "*traitement expectant*," and but few days or weeks pass before the occurrence of the well-known characteristic symptoms of general infection. M. Ricord never allows a patient to leave his hospital when the slightest induration even of the cicatrix exists; should he, in spite of admonition, quit, he is told that secondary symptoms will result, and the prediction is found to be too true.

The surgeon should always inquire of the patient, if he has ever previously suffered from secondary symptoms: for, as has been mentioned above, secondary symptoms once cured, hardly ever occur a second time in the same individual.

Let us now inquire how far the *complications* can assist our prognosis in reference to the occurrence of secondary symptoms. We may erase from the list gonorrhœa, paraphymosis, and phymosis, as they can have little direct influence in disposing to constitutional syphilis.

The circumstance of the existence of bubo demands a separate consideration. *A priori* reasoning might lead a surgeon to believe, that when a suppurating bubo exists, there would be a greater probability of constitutional syphilis following, than when chancre alone appears. Experience on a large scale, however, contradicts such an opinion; a suppurating bubo, as we shall hereafter find, is often but an internal chancre, and by no means proves that the virus has entered the system; we do not, however, find that absorption takes place more rapidly from this chancre in the gland than from an open chancre. This circumstance, moreover, seems to prove that the venous system plays an important part in occasioning the general infection. I would, however, refer my readers to the discussion of the prognosis of indurated chancre, in which this subject is further dwelt upon.

We must not omit *the local treatment* of chancre, in as far as it may render the occurrence of secondary symptoms probable.

Secondary symptoms will often follow when local treatment has been altogether neglected. They may (though in a far less proportion) succeed the most judicious local treatment. On the other hand, secondary symptoms may not occur, although the chancre be allowed to proceed without treatment, or although the treatment has been injudicious.

In respect to *general treatment*, the same observations hold good. Secondary symptoms do not necessarily follow when general treatment has been neglected. The best and longest-continued plan of general treatment will not in all cases insure your patient against their occurrence.

These facts at once show the absurdity of some persons' reasoning,

who attribute to the effect of treatment what in fact is only the usual course of the disease ; it is from want of acquaintance with the natural history of the complaint, that unjust blame or injudicious encomiums are heaped upon so many therapeutic agents.

TREATMENT.—In accordance with the plan I have pursued in other parts of this work, I shall divide the treatment into the different stages of *local* and *general* treatment.

LOCAL TREATMENT.—The more precise notions entertained by modern surgeons on the cause, progress, and termination of chancre, have rendered popular the employment of caustics in the profession, and, at the present time, escharotics are almost exclusively employed in the local treatment of ulcers on the genital organs, by all practitioners who acknowledge that chancre, like small-pox, or hydrophobia, depends upon a specific virus, capable of being destroyed *in situ*, soon after its coming in contact with the animal tissues. Although, however, medical men are agreed upon the efficacy of these remedies, there is anything but unanimity shown in the manner of their application ; and it is in the absence of any practical directions on the point, that I propose calling the attention of the profession to the uses and abuses of these substances, confining my observations to such matters as private practice proves to be necessary.

If a patient consults me within a few days after promiscuous intercourse on account of any slight abrasion or excoriation, I employ *nitrate of silver*, except in the instances hereafter to be mentioned. I am aware, that in most cases in private practice, the appearances about which a surgeon is consulted are not of a specific character, and that the disease, if left to itself, would probably get well under simple treatment. Patients who have once suffered from syphilis easily get alarmed, and come to their surgeon on the slightest appearance ; still, I must maintain, that in the early stages of syphilis, the specific disease is not to be distinguished by any characteristic appearance ; and I think it far preferable to cauterize nine simple sores than allow one specific ulcer to gain ground, which it will undoubtedly do if not cauterized, and the virus effectually destroyed. It is, however, by no means true, that all non-specific sores will heal under simple means ; or even if this were granted, it must still be allowed that nitrate of silver often expedites cicatrization, or, at any rate, does not retard it, unless injudiciously employed. I would urge, then, the employment of caustic in all these cases ; and the success of the practice will be the best guarantee of its efficacy.

Ricord says in his lecture on chancre, “Do you wish in one word to know the secret of the therapeutics of chancre. It is this ; to reduce the specific ulceration to the condition of a simple ulcer ; to transform a wound possessing its special cause into a wound which has no such tendency. This object is most successfully attained by cauterization ; not by a slight superficial cauterization, which only stimulates the ulcerated surface, but a deep, large, and *destructive* cauterization.”

In order that this should be efficacious, it must be applied in accordance with certain rules which I will lay down briefly.

The caustic should be spread over the whole surface of the chancre,

and a *little beyond it*. It is important that the action of the destructive agent should pass beyond the circumference of the ulceration. In fact, the specific virulence of the secretion exists not only in the area of the chancre, but extends beyond it to a variable and indeterminate extent, so that the neighbouring tissues, in appearance sound and intact, are often really infected. This infected zone ought to be destroyed by the cauterization.

The caustic I prefer is sulphuric acid combined with powdered vegetable charcoal, in the proportions necessary to form a semi-solid paste. This paste, applied to chancres by means of a little boxwood, glass, or ivory modelling tool, to be purchased of artists' colourmen, immediately dries and forms a black crust, which adheres to the tissues, and is one with them, only falling off several days after the application, generally at the end of a fortnight. When the crust comes away, the wound is a simple one, free from all specific virulence. Sometimes the reparative process is almost completely concluded when the scab comes away; and it is not an uncommon thing to find beneath it the cicatrix already formed. It must be admitted that this carbo-sulphuric caustic is an application attended with much pain. Nevertheless, the pain which it provokes is much less than that produced by many others, and it lasts a shorter time than that following applications of Vienna paste.

This form of caustic is doubtless a very valuable adjunct to our treatment, but in many cases it cannot be used exactly in the way mentioned above in consequence of the situation of the sore. When a sore is isolated, nothing can be better, but when the sore is liable to be bathed in secretion or urine, even this caustic fails to destroy the virus. As regards the suffering produced, I have not heard much complaint; patients tell you that from the moment of its application they lose the sensation of a constant gnawing pain which attends chancre that is progressing. The paste should be kept in a large-mouthed bottle, and a double glass stopper be used so as to exclude the air, the sulphuric acid having a great tendency to absorb moisture. To effect a cure the chancre must be *thoroughly* burnt out.

Experiments on inoculation have incontestably proved, that if caustic be employed soon after the reception of the virus, all further effects may be stayed; they have, moreover, shown, that up to the third day the disease is of a local nature, entirely confined to the parts with which the virus has come in contact; and the patient may be guaranteed against the occurrence of secondary symptoms. This possibility of entire destruction is by no means a universal law of all animal poisons. Glanders, when inoculated, and the pustule destroyed in twelve hours, still produces its usual effects; the rattle-snake poison acts still more rapidly, each animal poison having laws of its own. And in cases of chancre we may be called in too late, but the surgeon must not be inactive, but combat the disease with all his means.

Although, however, it is sometimes desirable to cauterize abrasions or excoriations, the injudicious and continued use of escharotics may be attended with great disadvantage, and the caustic may act as an irritant, preventing the healing of a sore.

This often happens with patients who think that they can treat

their own cases, and following, as they believe, the surgeon's plan, employ nitrate of silver most bountifully ; great pain is produced ; a deep eschar comes away in the course of a few days, the irritability of the organ is greatly increased ; and being unable to uncover the glans, the patient now seeks the assistance of his surgeon, who, after carefully examining the parts, finds the original sore re-inoculated, and perhaps several other small ones in the neighbourhood. These cases clearly show that the employment of caustic, in injudicious hands, may often do more harm than good ; that while the nitrate of silver destroys the virus of one sore, the irritation it produces prevents us seeing the mischief accruing to others. During the employment of nitrate of silver, the part should be carefully cleansed by being soaked in warm water, as the virus may exist on the surface of the neighbouring skin, and, if not washed off, will re-inoculate the sore when the eschar falls, and undue blame will be thrown on the caustic. In such a case, though no other ulcer exists at the time of using the escharotic, still another sore, or a little pustule, often only a few hours after, will appear, which, if precautions be not taken, will go on increasing, and the disease will spread rapidly. These circumstances explain several anomalies which have thrown discredit on caustic.

The parts should be carefully dried after being washed, and if it be an excoriation the surgeon is called on to treat, the skin should be put on the stretch, and the solid stick of nitrate of silver lightly passed across it, so as effectually to whiten the surface in its entire extent ; all cracks and crevices must be treated in the same way, and dry lint applied for the next eight or twelve hours after cauterization.

Should the surgeon be called upon to treat chancres at the orifice of the prepuce presenting the appearance of cracks, he must draw back the prepuce gently, and he will be enabled to cauterize the entire extent of the chancre ; but in repeating the operation, let him take care not to rupture the cicatrix, or this linear chancre will extend : the same observation applies to the treatment of chancres on the frænum ; to obviate the difficulty of healing such ulcers, I usually divide the frænum, and cauterize the whole of the cut surface. Without these precautions, it may be weeks before you will heal such sores. Reliance must not be placed alone on caustic and previous ablution, but extension of the disease should be stayed by lotions of an astringent kind ; the one I prefer is a solution of pure tannin, in the proportion of two grains to the ounce of water, which not only checks the discharge, but seems to tan or harden the skin : the private patient, however, should be told that this solution slightly stains his linen with a brown mark ; to obviate this, a weak solution of sulphate of zinc may be employed, or, if desirable, dry lint ; but dry lint has the objection, in some instances, of irritating the part, and prevents the eschar falling, thus preventing us re-applying the caustic.

We now come to consider how soon the caustic should be re-applied. The rule I follow is to employ it as soon as the eschar is removed, and this will vary in many cases ; generally speaking, it is sufficient to cauterize once in twenty-four hours, particularly if the sores be numerous or large. More frequent applications might be useful, did they not produce irritation, and should swelling of the prepuce arise,

the mischief will be greater than by allowing the disease to run its course, as, in the latter case, we should be unable to employ ablution. Before removing the lint, the part should be well soaked, or the eschar may be detached.

However useful nitrate of silver is in abrasions and excoriations, entire reliance should not be placed upon it in severe cases, or where pustules or ulcers are formed; for it is not sufficiently potent, its action being confined too much to the surface, and repeated applications are necessary, which may be oftentimes inconvenient. Whenever, therefore, the surgeon is called on to treat a pustule which he suspects to be a chancre, let him open it, remove the pus with a point of lint, and fill the little depression with Vienna paste,* or cauterize it with the Potassa cum Calce mentioned at p. 222. In cases where a scab covers the ulcer, it must be removed: this is readily done by a poultice or water-dressing, and then, after carefully washing the surface, a layer of one or other of the above-named potent caustics may be placed on the sore, and allowed to extend a little beyond the margin of the ulcer.

The application of the escharotic is, of course, followed by considerable pain, which gradually goes off; the sore, however, should be exposed until the eschar is dry, or the paste would act on any part it comes in contact with. This eschar falls in due course, and leaves beneath it, generally speaking, a cicatrized spot, or a healthy sore which has lost its specific action, and heals in a few days under a mild astringent wash.†

Canterization, however, will not be found of the same efficacy in very large ulcerations, nor have we seen such favourable results when sores are situated on mucous surfaces, or where they are kept damp; in these instances the abortive treatment does not succeed. Furthermore, the application of escharotics is not generally applicable in chancres attended with inflammation. Experience proves here, as elsewhere, that although nitrate of silver may be useful in allaying irritability, and in curing subacute inflammations, its employment in acute inflammatory attacks is very doubtful, or, at most, useful in but a very few instances; and though surgeons may derive great benefit from its employment in chronic ophthalmia, in scrofulous constitutions, and in subacute inflammation of the urethra, few, if any, ever

* The Vienna paste is made by rubbing together five parts of caustic lime and six of caustic potash. The powder must be kept in a well-stoppered bottle. When required for use, a little may be laid on the bottom of the saucer, and a few drops of spirit added, just sufficient to form a paste of a firm consistence; the escharotic may then be applied on the point of a steel instrument I keep for the purpose; and it is astonishing with what accuracy this paste may be employed, as it has no tendency to destroy the surrounding parts when made of the proper consistency, and no protection to the skin is required; but I always have by me a little vinegar, in case of any minute particles falling about, and the acid immediately stops their action.

† In going round the wards of the Venereal Hospital of Paris, I saw the surgeons remove the prepuce in cases where it was long, and chancres situated at the orifice. The cut surfaces were immediately cauterized, and my informant told me that in this way a more rapid cure was effected. I remarked that this might do in a public hospital, but in private practice in England I felt confident that no gentleman would submit to an operation of that kind. I mention the circumstance because these complications very much interfere with our treatment, and delay the cure.

recommend it in acute affections of these organs, unless in the single exception of erysipelatous affections of the skin, in which it has been, like many other applications, much vaunted, and subsequently laid aside. When chancres are attended with acute inflammation, caustic will be worse than useless; experiments prove that phagedena destroys the virus, and they likewise show us that caustic often increases instead of allaying inflammation; therefore, when the phagedenic complication is present, recourse must be had to opium, rather than to nitrate of silver, as I shall show when treating on that variety of chancre.

But it is not alone in acute inflammatory chancres that we must lay aside the use of nitrate of silver; we should never apply it when previous applications have irritated the sores, or we might continue its use *ad infinitum*, without healing the ulcer.

On April 12th, 1846, a gentleman who had previously suffered from chancres, and experienced the benefit of cauterization, had connexion with a suspected female, and observing an excoriation the next morning, himself applied nitrate of silver most plentifully; the eschar fell in twenty-four hours, and, the patient states, a quantity of pus escaped; he thought it necessary to burn the sore a second time, and applied the caustic freely; in two days, feeling alarmed at the pain and redness, he called on me. A pustule, exactly similar to those delineated as following inoculation in Plate V. Fig. 2, was visible on the penis; the white pellicle was surrounded with an inflamed areola, and there was some pain. I felt pretty well convinced that this was the result of irritation alone. I prescribed water-dressing, and the pustule healed in a few days. Now this is one of a large class of cases where diagnosis is difficult, and which are often seen in private practice, arising from irritating applications. A few days, however, generally clear up any doubts a surgeon may have; for if the condition of the sore be the result of irritation, the pustule heals; if it depends on chancre, the disease progresses, and the surgeon has the certainty that he is treating a venereal sore, instead of one of those simple irritated excoriations, which I have more than once seen submitted to a course of mercury, under the supposition that the patient laboured under virulent disease.

Another counter-indication to caustic is induration of a sore; the surgeon should never cauterize a genuine Hunterian chancre, or one attended with induration; if he does, he will cause great pain, the sore will become irritable, and gangrene will often follow, as I have observed in several instances. Cauterization of such sores shows great ignorance of the objects and aim of the employment of nitrate of silver, as well as of the treatment of induration; for as these sores secrete little, we have scarcely any virus to destroy. But even destroying the induration would be of little avail, as experience shows that where hardness exists, the constitution is already contaminated, and if removed, we should have no criteria to go by, of the state of the system, until secondary symptoms appear. The ulceration on indurated sores depends on the hardening impeding the cicatrix forming, and to remove this, absorption must be brought about by other means, as I shall hereafter show, in speaking of Indurated Chancres. From these considerations, then, I never employ caustic

where there is induration, and consequently I do not find patients complaining, as they are said to have done formerly, that destroying chancres with caustic produces secondary symptoms, from driving the disease into the system, a charge it is well to avoid, however impossible such a thing is believed to be by practitioners in the present day.*

During the course of treatment, a patient will occasionally complain of vague pains in the groin, in some cases shooting down the cord; the finger can, however, detect no tenderness or enlargement in this situation, and we may generally set down these cases to irritation of the extremities of the nerves, which will disappear as soon as the cauterization is laid aside. In my own practice, the occurrence of bubo is very unusual, and when observed, follows usually in persons who have previously suffered from swellings in the groin: in these instances every precaution must be taken to avoid their reappearance, by enjoining rest; but I have great doubt if low diet is necessary, although a recumbent position is highly desirable, and on the first appearance of swelling or heat of the groin, leeches and cold applications must be resorted to.

Bubo, let it be remembered, depends not so much on the treatment as on the situation of the sore, as I have stated at page 301.

The treatment of the few remaining cases of simple uncomplicated chancres which it is not thought advisable to deal with on the abortive plan, for reasons stated above, is very simple. We have to prevent the occurrence of inflammation, and in cases where this is threatened there is no form of lotion so good as the saturated solution of opium. We have also to check the secretion of the sore, and to tan or harden the surrounding surface so as to prevent inoculation. This is effected by employing astringent washes. I usually prescribe

R. Acid. Tannici . gr. iv.

Aquæ ʒij.

M. ft. Lot.

If this gives much pain, I dilute it further, so as to produce only a slight smarting, which should not last more than a few minutes. Let the patient bathe the sore four or five times during the day with this lotion; a small piece of lint soaked in it may be laid upon the sore, and the whole may be covered with a piece of oiled silk; thus the lint is kept constantly moist; it will be found well to wet again the parts before removing the lint, as it might become adherent, and cause the sore to bleed if detached with any violence.

The patient must keep quiet, but it is by no means necessary to insist on the horizontal posture, or confine him to his bed; his diet should be light but nutritious.

If parts of the sore granulate too luxuriantly, they may be lightly touched with nitrate of silver; the caustic may, moreover, be used with advantage in hastening cicatrization; it acts the part of an

* There are some cases in which we cannot burn the chancres, and the best application that I know of in attempting to neutralize the virus, is the following:—

Liquor Potass. Permanganatis, ʒij.

Cond. gr. ij. ad ʒj.

Aquæ, ʒj.

M. ft. lot.

artificial skin, screening the delicate surface beneath from the contact of the air.

Of all things, let the surgeon lay aside the old system of treating chancre with greasy applications; the lard will soon become rancid, and thus eczema and irritation be produced around the sore, favouring further the secretion of pus, and the chances of inoculation, as well as the extension of the sore, will be considerably increased. When perfect cicatrization has been obtained, and no local disease remains, the patient may be allowed to resume his usual occupations.

GENERAL TREATMENT.—In speaking above of the local treatment, nothing has been hitherto said of general or constitutional means, particularly as those who contract syphilis are generally in excellent health, and I have usually found in the local treatment of uncomplicated chancres, these simple means effect a speedy cure; and I must protest loudly against any general or constitutional treatment being employed, provided the health be good; in such cases the patient need not observe any restriction as to diet, but it is better to abstain from horse-exercise, or violent excitement of any kind.

But must no *mercury* be given to expedite the cure and prevent secondary symptoms? Before speaking of the necessity of taking mercury, I wish to remind the reader that a person who has undergone, or is undergoing, a course of mercury, is as liable to a fresh local contagion (if he expose himself) as if he had not taken a grain of the mineral: for the mineral by no means acts as a local antidote. The result of numerous cases treated during the last twenty years, many of which still remain under my observation, induces me to believe that mercury is by no means necessary either in expediting the cure, or in preventing secondary symptoms. Without the mineral, the local cure is rapid, and secondary symptoms do not occur, except in such small proportions that they should not enter into our calculations. It is true, the exceptional cases may injure the reputation of the surgeon, and he may be told that had the patient taken mercury, constitutional infection would not have followed; but in nine out of ten other cases, the patient will justly extol the merits of his surgeon, who has spared him a course of mercury, which immunity from constitutional disease proves to have been unnecessary. I believe mercurial treatment in simple chancre to be scientifically wrong and unnecessary, and it is no justification for the treatment of those who maintain that every chancre or sore on the penis should be treated with mercury, that, if secondary symptoms follow, the surgeon at least cannot be blamed, and the treatment without mercury called in question. They will find, to their cost, that they give mercury where none is required, and give an insufficient quantity in cases calling for its administration. There is another large class of practitioners, however, who administer mercury whenever a sore appears on the genital organs, on the same principle that I have recommended the application of escharotics—namely, that perhaps the sore is not specific, but in the absence of any absolute diagnostic sign, they wish to be on the safe side, and guard the patient from secondary symptoms. Did mercury act like

nitrate of silver, and confine its effects to the local influence on sores, this idea would be tenable; but to effect the purpose, the sore must be acted on through the constitution; and will any surgeon assert this can be done nine times in ten with impunity, particularly when experiments prove that in these nine cases recourse to mercury is unnecessary, and, that when employed, it gives no absolute guarantee against secondary symptoms, as the recorded cases of mercurialists prove.

We, however, meet in private practice with another class of extremely well-educated surgeons, who believe that mercury should be given in most primary sores, and in the very earliest stages; and they prescribe it from a deep conviction that mercury thus given prevents absorption of the virus into the system; or if it does not prevent this, causes at least the absorption of the antidote at the same time, and in consequence the disease will not, say they, be followed by secondary symptoms. This school has, however, assumed as proved several points which experience by no means corroborates. For instance, I am not aware of any series of experiments to show that mercury will prevent absorption of the virus; on the contrary, mercury is by many believed to hasten this process, and in that belief is largely given. The supposition that it acts as an antidote in the circulation seems founded on no facts whatever that I can discover. If it be pretended, when mercury is given in the earliest stages, and no secondary symptoms follow, that the immunity depends upon the treatment, no conclusion can, I think, be more impotent; for the same thing will often happen where mercury has been altogether abstained from. The records of hospitals, and the experience of private practitioners who treat cases without mercury, prove that the same effects in this respect follow the non-mercurial as the mercurial treatment.

Let it, however, clearly be understood, that these observations apply exclusively to the unindurated chancre. The hardened sore requires a peculiar treatment, both local and general, as I shall have occasion to show; and much of the diversity of treatment, as well as the conflicting opinions on the disease, depends upon authors not regarding the marked distinction attending the course of the indurated, as compared with the simple ulcer. Almost all surgeons are unanimous upon the inutility of iodide of potassium in simple ulcers, and few now prescribe sarsaparilla; in fact, the treatment of uncomplicated cases of chancre is becoming purely local. Experience has sanctioned this practice, which is now followed to the almost entire exclusion of all other treatment.

The general treatment, then, of primary sores in my own practice is of the simplest description. Many patients never even take a single aperient pill, and sarsaparilla has been long excluded from the after treatment in persons whose health is good and constitution unimpaired. Should a patient's health be bad, of course aperients, tonics, stimulants, demulcents, and so forth, may be employed. I would only state here that they should be given for the sake of the effect we wish to produce on the peculiar symptom present, not from any necessity of guarding the constitution against syphilis.

It has been stated (p. 289) that artificial chancre itself is liable to variations in its ulcerative stage; it is to a consideration of the causes, consequences, and treatment of these varieties, that we now particularly invite the attention of our readers.

If the reader will consult the work of the late Mr. Wallace he will find a minute description of an immense variety of sores, and in other authors the same abundant nomenclature will be found, but all these may, as far as practical purposes are concerned, be grouped under the heads of GANGRENOUS, PHAGEDENIC, SERPIGINOUS, and INDURATED CHANCRES. Let the reader, moreover, recollect that in practice these divisions are even not always recognisable; very frequently a sore partakes more or less of the characters of two of these varieties; nature recognises none of these artificial surgical distinctions, they are arbitrary divisions made by pathologists, principally for the purpose of describing seriatim the different changes ulceration may undergo; but although occasionally we find typical cases of these affections, more frequently they blend one with another, as will appear in the following pages, and the surgeon may find some difficulty in distinguishing the different sores; the diagnosis, however, is of great importance, for the proper treatment depends upon a correct view of the case, as what may be good for one form of sore is often detrimental to another.

INFLAMMATORY, IRRITABLE, AND GANGRENOUS CHANCRE.

SYMPTOMS.—A chancre may assume an inflammatory character from the moment the virus comes in contact with the abraded surface. The usual concomitants, pain, heat, redness, and swelling, which are often very slight in simple chancre, may set in, and become aggravated in a very short space of time, when inflammation thus early occurs. We witness it in young plethoric men fresh from the country, who live freely, undergo great fatigue, and take large quantities of stimulants, the affection taking on a frank inflammatory type, not by virtue of any specific action of the virus, but from the state of the system. This is the form of inflammation that requires free depletion, and which is benefited by it more than any other; in fact, unless local and general bleeding is employed, this form readily goes on to produce gangrene and a great loss of parts. In private practice in London, this form of inflammatory chancre is not often met with, but in hospitals it is not of unfrequent occurrence amongst bargemen and railway labourers.*

* When the British army landed in Portugal, our soldiers were all of the native breed and habits,—sanguineous, plethoric, highly-fed soldiers, and addicted, as they had ever been, to the abuse of alcoholic stimuli. The climate at the autumnal season of the year was hot, and the campaign, before reaching the capital, had been active. Under these circumstances, intercourse with the common women of the country produced the usual consequences of syphilitic disease, for which at that time we knew of but one remedy—*intus et in cute, ab ovo usque ad mala*, and afterwards, so long as the patient remained above ground—no matter what mutilation and exfoliation he might have suffered—mercury was the sole panacea. With such

CAUSES.—Inflammatory chancre most frequently arises from some irritating application to a sore, or from some peculiarity in the situation of the ulcer; thus we witness it when caustic is injudiciously applied either in too strong solution or too often repeated; we meet with this form in sores seated close to the frænum or meatus in the male, at the fourchette or around the anus in the female.

In men, one of the most common causes of gangrenous chancres is the existence of a narrow prepuce. The secretion of the chancre thus confined in the species of sac formed by the prepuce, causes inflammation, additional chancres ensue, so that the lining of the prepuce may become an ulcerating, virulent surface. The loose cellular tissue of the prepuce becomes œdematous and inflamed; a phlegmonous or an erysipelatous state succeeds, which often terminates in gangrene; a dark spot appears on the prepuce, usually on the upper part; an eschar forms, falls off, and the glans is observed appearing through the ulcerating opening; a fetid discharge oozes out, composed of the detritus of the gangrenous tissues. In some cases destruction of the prepuce only occurs; in others the glans participates, and a great portion may be destroyed; the vessels of the surrounding parts are exposed, then ulcerate, and hæmorrhage follows, which it is often difficult to check, producing the mischief seen in Plate VI. Fig. 3.

We meet with the same effects in cases of paraphymosis, where the circulation is interfered with, in consequence of the constriction of the part as well as the swelling which it produces; and in this and the last case no treatment will be of any avail, unless an operation be performed.

One peculiarity in this form of gangrenous chancre is, that the specific action of the virus is usually destroyed, particularly when gangrene occurs early; and although it may give rise to severe destruction of the organs affected, yet secondary symptoms rarely occur; and however destructive the local mischief may have been, constitutional infection need not be dreaded.

The power of the system to repair large chasms and mould parts again to something like their original form, is nowhere more strongly witnessed than after destruction by gangrene of large portions of the penis. As soon as the sloughs are thrown off, healthy granulations

subjects, more especially at the beginning of the disease, before being lowered and depleted, it might have been foreseen that phagedæna would assume the reins while mercury gave the spur. Our hospitals everywhere exhibited instances of the most melancholy mutilations, and even amongst the officers these were occasionally seen. The Portuguese meanwhile regarded our practice with horror and astonishment. With them the disease was ordinarily of a chronic and mild character. It was a misfortune of which they thought no more shame than they would of scrofula or of cancer, and they sought no concealment. All this led to my first publication in the *Medico-Chirurgical Transactions*. Mercury in excess and long-continued, had even led to exfoliation of the facial bones; and for these exfoliations we gave more mercury. Need we then wonder at the number of victims, as we then thought of the disease, but in fact of the remedy? The Portuguese, I may almost say, had no phagedæna. I cannot call to mind a single instance similar to ours, with the exception of a camp follower on the establishment of a staff-officer; but he was as highly fed, as hard a drinker, and as sanguineous as any of his English fellow-servants.—(Dr. Fergusson's "Notes and Recollections (may I not add confessions?) of a Professional Life," p. 123.)

sprout up most rapidly, and the sore, losing its specific action, cicatrizes very perfectly, leaving the most essential portions of the virile organs intact. When the surgeon is called in very late, portions of the glans may be lost, but the corpora cavernosa and corpus spongiosum are seldom implicated, and the loss of cellular tissue is of no moment; it is singular that gangrene spares bloodvessels, nerves, and fibrous tissues, which often are seen intact amidst the havoc of the undermined and destroyed cellular tissue.

The TREATMENT of inflammatory chancre consists in removing, if possible, the cause which has given rise to the complication. Rest in the horizontal position, if not confinement to bed, is indispensable, and without it all our other remedies are often ineffectual. The general treatment should commence with a brisk purge of jalap, followed by salines if necessary. General bleeding may be called for; but the surgeon should pause before employing depletion, as rest and abstinence from the exciting causes of disease rapidly brings down the inflammation, particularly in persons accustomed to live in large towns.* Bathing the parts, and strict attention to cleanliness, are of the first importance in the local treatment. Leeches may then be employed in sufficient numbers, and at a proper distance from the sore. Lotions of the saturated aqueous solution of opium, (formed by boiling half an ounce of opium in twelve ounces of water until reduced to eight ounces) should then be applied warm, the lint being covered or not, according to the feelings of the patient, with oil-silk, and changed as often as it may be necessary for comfort or cleanliness. This must immediately be followed by laudanum, taken internally in large and frequent doses, provided the stomach and head will bear it. It is surprising what large quantities men, who have never before taken even small doses of laudanum unattended with headache, will swallow without the slightest inconvenience.

In 1851, I attended a person who had been also seen by Mr. Stanley and Mr. Laurence. He took one ounce of Battley's sedative solution of opium on the 23rd of November, one on the 24th, and one on the 27th. On the 3rd of December one ounce, on the 5th one ounce, on the 8th one ounce, on the 12th one ounce; seven ounces in all. The disease was not at once subdued, but I attributed its recurrence to leaving off the opium too soon. I now administer very large doses of opium fearlessly, only taking the precaution of watching the patients very carefully. The patient mentioned above got well ultimately under the effects of lemon juice, iodide of potassium, and sea air.

I once attended a gentleman, who took an ounce and a half of laudanum in three days, his tongue remaining clean, and appetite

* The late Mr. Aston Key thought highly of the cold infusion of sarsaparilla in lime-water. "Its power of allaying irritability of action, local and general, is incontestable; it lessens the frequency of the heart's action, softens the quick beat of the pulse, and diminishes the irritability of brain evinced in the eyes, and of the intestinal canal, as indicated by the tongue of some patients. When the languor of debility is present, this form of sarza is of little use; it is only when there is inordinate action, short of inflammation, that its benefits are distinctly seen; and not only in this, but in all forms of venereal sore accompanied by such conditions of irritability."—"Guy's Hospital Reports," vol. iv. p. 531.)

not impaired. I have found Battley's preparation succeed best, as it produces less nausea than the tinc. opii or morphia. The surgeon, in giving opium in large doses, must recollect that it has a tendency to temporarily paralyze the bladder; at least the patient may be unable to make water, although feeling a desire to do so; in such cases a warm bath or hip bath is the best remedy. The patient should be told of the probability of this, or he will get much alarmed. This retention of urine is of minor importance, but is a very general result of freely employing opium.

I cannot close these remarks on the use of opium without making a few observations on the addition of nitric acid to opium in the treatment of these ulcerations. In a paper read before the Medico-Chirurgical Society by Mr. Welbank, reported in the eleventh volume, the external employment of nitric acid and opium is recommended for sloughing phagedena, in the form mentioned a few pages further on, and the method is still largely used in some hospitals as well as by some surgeons in their private practice. I lately met, in consultation, a gentleman who, finding the case not progressing very satisfactorily, advised the addition of nitric acid; against my wish the acid was used; the first application gave great pain, the inflammatory symptoms became aggravated, and the patient was obliged to leave it off. I have found nitric acid in no case useful as an addition, and I have yet to learn on what correct principle it can be recommended. I can myself imagine no more unscientific compound.

In cases where gangrene becomes imminent, or has already taken place in consequence of phymosis, instant steps must be taken to relieve the complication. This is done by passing a director between the glans and prepuce, and dividing the prepuce with a bistoury;* considerable hæmorrhage follows, which freely unloads the vessels; however, this does not always stop the gangrene, which may destroy a great portion of the prepuce. Inoculation of the entire cut surface may follow, although this seldom occurs, as the gangrene will usually destroy the specific nature of the virus. When a case presents itself, in which the prepuce is already destroyed and the glans is exposed, it is better to apply the opium solution, and allow the disease to take its course; the gangrene usually performs the part of the knife, and complete circumcision results.

The healing of the divided parts may be often much expedited by loosely fastening a strip of calico half an inch wide round the penis to support the vessels. I have seen patients able to leave their beds and resume their ordinary occupations much sooner in consequence of this treatment. The diet should be generous, and bark either in the form

* The young surgeon must take care that the director is really placed between the glans and prepuce. I was once present at an operation when I saw a surgeon slit up, as he thought, only the prepuce. Let the reader imagine his dismay at finding that he had introduced the director into the urethra, and his bistoury had divided the canal to the extent of an inch, as well as the prepuce. I should not have supposed this mistake liable to occur, had I not seen it made by a hospital surgeon; and the mere recital of it will, I hope, make the young practitioner avoid such a deplorable result, particularly as the cases in which the operation is required are often attended with swelling of the prepuce, which becomes very narrow and thickened by inflammation.

of quinine or the decoction of cinchona should be given. The occasional application of pure nitric acid to parts of the sores is very beneficial.

An incision cannot be of service in the later stages of the disease, as no part is strictured, and the tissues divided present a puffy, lardaceous character; it is therefore preferable to wait until all inflammatory symptoms have passed away, and then remove by the knife any portions which inconvenience the patient.

When paraphymosis occurs as a complication in the inflammatory chancre, reduction may be tried, but in the severer forms it is better not to attempt it, unless it is quite evident that our efforts will succeed; the manipulation will only tend to aggravate the inflammation, and we may convert a case of paraphymosis into one of phymosis.

In such cases instant relief must be given, the fear of your incision becoming inoculated must no longer be considered, and a free division of the stricture or strictures must be made. This is done by cutting through the thickened and swollen edge of the prepuce behind the glans penis, exactly in the median line. The blade of a narrow bistoury should then be introduced under the contracted part, so that this may be divided to the length of an inch, and then any little bridges which appear further to cause the stricture must be successively divided, and the case be treated by opium and water dressing, as above described. No sooner, however, is the constriction relieved, than the inflammatory symptoms abate, although in the more advanced stages gangrene will completely circumscribe the patient. In many of these cases we have to divide œdematous and infiltrated structures; and much hæmorrhage may ensue, in consequence of the vessels not retracting. In some cases it may be allowable to let the blood flow, in others, however, the bleeding should be checked; and to do this most effectually, a needle may be passed under the vessel, and a twisted suture employed; but I would abstain, in all cases where it is possible, from any sort of irritating dressing, as liable to keep up irritation in the wound. In instances where hæmorrhage comes on in consequence of the gangrene having opened a vessel of considerable size, it may be necessary to apply dry lint or burnt powdered alum to check the hæmorrhage, but as soon as possible these foreign bodies should be removed; and lastly, I would recommend the surgeon to abstain from using balsamic or irritating applications, recommended so strongly by the old surgeons, who did not make those distinctions which the advanced state of pathology enables us to do.

When the sloughs are very offensive, it may be advisable to use lotions of chloride of soda, in the proportions of one drachm to the pint. Fresh made and powdered charcoal may be sprinkled on the sloughs; this will absorb moisture and destroy the smell, which is often most offensive. As soon as the slough can be removed, it should be done by dividing it as close to the sound skin as possible, but no violence should be used, lest an artery be opened; to avoid this, the perfectly dead tissues should be alone cut through; relieving the sore of any unnecessary sphacelated portions will be advantageous, provided they are not adherent in their whole extent, a circumstance rarely

occurring in this form of the complaint. I have seen no good result from camphorated spirit, and the thousand-and-one remedies vaunted by the older writers. I have had no opportunity of trying the new deodorizing agents.

PHAGEDENIC CHANCRE.

In private practice in London, modified forms of this kind of chancre are by no means uncommon. A patient leading an irregular life contracts chancre, which by rest and attention is going on well; under the influence of some pressing engagement, or merely from ennui, he commits some indiscretions or excesses; the sore loses its healthy appearance, granulations disappear, the surface gets dark-coloured, the discharge serous or ichorous, a dark areola forms around the ulcer, which extends gradually, by a liquefaction as it were of the surrounding tissues. Rest and opium lotion will soon bring this patient's sore into a healthy condition, provided he lie up—is of a healthy constitution—has not been taking mercury—and lives in a good airy neighbourhood; but if he have not these circumstances in his favour, or if the surgeon, as too often happens, gets frightened, and thinks mercury necessary for the cure; or if the patient is worn down by a course of dissipation, and inhabits close, confined chambers, the sore will increase, and may assume a very severe form.

Ricord says—“Phagedenic ulceration is but *an accident*, a complication. In this sense it *may* attack either form of primary ulceration. Nevertheless, in consequence of some predilection, as it were, the secret of which we do not know, it generally attacks the simple or soft form of chancre. Indeed, compared to the frequency of its appearance in soft chancre, its occurrence in the indurated form is exceptional. Phagedenic complications of the indurated chancre also are generally more limited in extent, and much less virulent in nature than those of simple chancre. We seldom meet with instances of phagedena accompanying the infecting ulcers which destroy the tissues to so great an extent, and offer such a thorough resistance to our remedies as those which appear in the other variety of the primary venereal ulcer.”

The student will daily have evidence of the phagedenic sore in the cabman and prostitute who apply to the hospital; no form must be more familiar to his eye. In fact, so common are modified forms of phagedena that, in commencing my studies, I believed it formed one of the characteristics of syphilis. This arose in part from the class of persons treated at an hospital, and from the practice being to give mercury to the majority of persons labouring under syphilis. I need scarcely say that it is dangerous to form our opinions on such instances, as in other ranks of life syphilis does not generally assume these characteristics, although phagedena may become a complication of it. The subject is one of considerable importance, and the treatment which I am about to recommend has

appeared to some surgeons extraordinary. I would therefore strongly urge the subject on the attention of the profession, as one deserving their consideration, not only from the frequency of the disease, but from the invariable success of the treatment, provided attention be paid to the diagnosis of the cases.

CAUSES.—Phagedena depends most frequently upon the general state of health; local causes may aggravate it, such as irritating applications, &c., or constriction of the parts, or the situation of the sore, but though these causes may induce inflammation, they alone do not produce the complication.*

Among the most common causes is a pale anæmic state of system, too often met with among our town populations, the effect of want of pure air and regular exercise, residence in ill-ventilated or confined houses, damp situations, a lymphatic temperament, scrofula, unwholesome food, dram-drinking, and a course of dissipation which the habits of London life offer to the youth of England, and which cannot be surpassed in any capital in Europe. Among all its dissipations, neither Paris or Vienna can compare with London in its late hours; in the continental capitals all retire at eleven o'clock, in London at that hour dissipation is only commencing, to be continued until the Frenchman or German's usual time for rising. Broken rest is among one of the many causes why the young Englishman's constitution is so soon ruined; may we not add likewise the large quantity of stimulants the young London rake thinks it fashionable to take as compared with his continental brethren?† In all these cases the nervous system suffers more than the vascular.

CHARACTERS OF THE SORE.—The phagedenic sore may vary in size from that of a pea to a crownpiece; usually it is superficial, rarely extending deeper than the subcutaneous cellular tissue. The shape is more or less round, but still irregular; the edges, of a brownish hue, are usually undermined, and the disease has a tendency to burrow, particularly if position assists it. The base of the sore is somewhat swollen, not however indurated; the surface is uneven, covered with little eminences and depressions; presenting here and there attempts at cicatrization; a more or less adherent yellow matter covers the ulcer, which it may be difficult to remove,

* Mr. Aston Key makes the following observations on phagedena:—"The more immediate effect of phagedenic tendency in sores is an extension of the ulcerated surface, and the cause lies in a morbid degree of susceptibility or irritability of the system. Ulceration is the destruction of tissue by inflammation; it is clearly not a process of absorption but of simple disintegration of tissue; it occurs only when the vital powers are reduced and are unable to control the action that tends to disorganize the structure. It differs from gangrene in this, that while in gangrene, vitality ceases before the disintegration of the tissue has time to take place, in ulceration the parts are still subject to the vital powers while they are undergoing a change from a solid organized texture to a fluid inorganic mass. What the state of circulation is in parts undergoing ulceration is difficult to ascertain; it cannot wholly cease at once, as gangrene would be the result. It is probable that the influence of the nervous and circulating systems is gradually withdrawn from the surface of parts about to ulcerate. Whatever may be the physical explanation, the physiological state is one of weakness, accompanied with an excess of action in both the vascular and nervous system of the part."—"Guy's Hospital Reports," vol. iv. page 433.)

† In M. Ricord's wards, September 20, 1847, I only witnessed five cases of phagedena, showing the small proportion out of 112 patients.

or which comes away in shreds. Granulations are altogether absent, or, if any exist, are observed to be pale, few in number, transparent, and swollen, looking like vesicles. Most frequently, however, the surface of the ulcer is of a greyish colour, interspersed here and there with little bloody points or reddish lines. The pus is thin and offensive, holding in suspension the detritus of the tissues and flocculi of pultaceous matter; it is inoculable during the progressive period. The ulcer extends rarely, however, beyond the subcutaneous cellular tissue. It may last a long time, and cicatrization may be much retarded.

It is not uncommon to see on the surface of the phagedenic ulcers a species of ecchymosis, and sphacelated spots. (See Plate VI. Fig. 1.) There is pain of a peculiar stinging smarting kind, which keeps the patient very restless.

The general symptoms seldom run high, the fever is rather of an adynamic kind: there is often prostration of the vital powers; in advanced stages of the disease, the appetite is lost; there is heaviness in the head, palpitation, neuralgic pains, and a peculiar unhealthy hue of the skin; various eruptions now appear either around the sore or on the body; these may consist of ecthyma, eczema impetiginodes, or rupia, all which have been and may be mistaken for secondary symptoms. The debility and general prostration of the animal powers gradually increase, and the patient, unless relieved, gradually sinks, worn down by diarrhoea and colliquative sweats. M. Ricord states he has found ulcerations in the intestines in cases in which he has had an opportunity of performing post-mortems.

DIAGNOSIS.—I have already noticed (page 312) that inflammatory irritable chancres, phagedena and gangrene, are merely optional divisions, which, although very different from one another in some cases, yet approach each other through gradual shades, until it is often impossible to say whether a sore partakes more of the character of the one than of the other, particularly when the causes common to both forms occur in the same individual. Still the reader will, from the above descriptions, be able to recognise the phagedenic sore in the majority of cases. Inflammation, or some local irritating agent, is the cause of inflammatory or gangrenous chancre, whereas a peculiar state of constitution is the origin of phagedena. In the former the health of the patient is not impaired, on the contrary the powers are rather above than below par; the reverse happens in phagedena. In gangrene there is death of the implicated parts, and sloughs come away; in phagedena a sort of liquefaction of the tissues arises, melting down the surrounding structures which are previously destroyed. The gangrene does not confine itself to the superficial tissues, as does phagedena, and the destruction of those that are implicated is much more rapid. These are among some of the diagnostic symptoms of the two affections.

Mr. Aston Key says, "The distinction between an irritable and an inflamed ulcer is sufficiently broad, and yet the terms are often confounded, and even misapplied. An inflamed ulcer, because it is painful, is regarded often as an irritable sore—an error that leads to most painful mistakes in practice inasmuch as the treatment most appropriate to the reduction of inflammation is neglected, and the sore is brought under the action of remedies that tend rather to in-

crease than alay inflammation. The vivid colours of the surface, the fibrous deposit covering the granulations, the ichorous discharge, and the thickened edge, one or all evince the existing degree of inflammation, while the absence of those signs, and in their place a degree of sensitiveness disproportioned to the extent of inflammation, or a disposition to spread by ulceration, is evidence of an irritable state of sore. But though the extreme of each class of sore is distinct enough, the line that divides them is not so clear or defined. Many sores exhibit more or less of both characters. An ulcer may be highly sensitive, and at the same time inflamed, and yet not be disposed to spread in consequence of the patient's *vis vitæ* not being sufficiently reduced; while a similar ulcer in another patient, attended with the same degree of inflammation, shall become phagedenic from want of constitutional vigour. Inflammation, therefore, as a cause of phagedena, is not to be lost sight of; nor an exclusive regard be paid to the irritable state of the sore or the patient. A mixed view of the case leads to a mixed mode of treatment. Inflammation in one degree, combined with much irritability, leads to destructive ulceration; a higher degree of inflammation, with a less degree of irritability, leads to the yellow slough; whilst the highest degree of inflammatory action, with a further diminished irritability, produces the dark slough or gangrene."—"Guy's Hospital Reports," vol. iv. p. 435.)

Again, at page 410, Mr. Key, in speaking of the distinction between severe cases of inflammation leading to sphacelus and phagedena, says: "The difference between this and phagedenic action is, that in the latter the texture of the part affected retains its vitality, but not its integrity; while in the former (sphacelus) the reverse takes place; the circulation quickly ceasing, while the texture appears to undergo but little change, or even none, if the gangrenous action be rapid."

Before quitting the subject of diagnosis, however, there are various exceptional cases that require notice. Among these may be specified

Tertiary Sores.—In 1856, towards the end of the year, a stout middle-aged gentleman called to show me a sore on the body of the penis. I suspected it to be a primary phagedenic sore, and gave him iron, enjoined rest, and subsequently opium. The sore, however, did not get well. After some time I suspected, from the history which I subsequently obtained, that this sore might be a tertiary symptom, which I believed it was. I gave him the syrup of the iodide of iron, and he recovered. In March, 1857, he came to see me, and reported himself quite well.

PROGNOSIS.—The favourable prognosis of phagedena depends rather on the treatment a surgeon is about to pursue, than on the cause which has given rise to this form of complaint. The patient's pain may at once be relieved, provided he be seen early, and all irritating local or constitutional remedies be left off, and the patient promise to follow the directions of his surgeon; but if, on the contrary, late hours, and a course of dissipation be continued, and the treatment neglected, nothing that the surgeon may be able to prescribe will be of the slightest benefit. Prognosis is the more

unfavourable in proportion as the health of the patient has been worn down by a course of mercury; and this is one of the most common complications in practice, for the surgeon, too often finding the sore progress from bad to worse, has recourse to mercury, which leaves the patient in a worse condition than before; if however, even in this case, the mineral be left off, and sarsaparilla given, the constitution rallies somewhat, not I believe in virtue of the remedy, so much as from abstinence from mercury. If the reader has inclination to read through the pages of modern treatises, this admission that mercury *is not always* beneficial, is made even by the most devoted mercurialist; the consulting surgeon is too often not called in until mercury has been used or left off, and his services are required because the case is getting rapidly worse. Even in these instances proper treatment will cure the patient, although convalescence may be somewhat retarded. The deformity resulting from the local sore will be but slight, but we cannot guarantee the patient against some of the various secondary symptoms which not unfrequently follow, and which it is often difficult to characterize.*

TREATMENT consists, in the first place, in removing the patient from all those remediable causes which by possibility may have produced this variety of chancre. If the means of the patient allow of it, I at once send him to a more airy situation, or induce him to leave home for a short time; I prescribe warm baths once or twice a week, attending to his diet, which should be nourishing without being stimulating; if he has been in the habit of indulging in wine, his supply should only be gradually left off, or the system suffers. In the severe forms the patient is obliged to keep his bed, but even in the slighter cases, remaining on a sofa or bed is of infinite service. All greasy applications must at once be left off, and purgatives may be given so as to clear the primæ viæ; but in other instances diarrhœa must be checked. If the appetite is impaired, tonics should be used; in fact, our first care should be the general health of the patient, without attention to which all our other remedies will not avail. If general or local mercurial treatment has been employed, let it at once be left off; however unfavourably the case may turn out, let the young surgeon *never†* be induced to give mercury under any pretence whatever in acute cases of phagedena. Upon this question nearly all authors are unanimous—theory and practice go here hand in hand. I have witnessed unfortunately its sad effects when given by a few persons who still believe in its efficacy, and the results have invariably been unfavourable. The irritability is increased, the patient, already reduced, finds his powers still sinking lower and phagedena progress-

* "I had occasion to watch nine cases of severe phagedenic chancres, the duration of which varied between ten months and three years. Notwithstanding the obstinacy of these ulcers in an inoculable state during this long period, in no one of them did secondary symptoms occur. I however forgot to say, that in one instance syphilitic roseola broke out in one of these individuals; but two months before the eruption, the ulcer on the penis, which had resisted all species of treatment during ten months, had suddenly become indurated, under the influence of some cause which we were unable to discover."—(Dr. Macarthy's "Thesis," page 18.)

† The only exception is to be met with in a form of indurated chancre attended with central slough. (See Plate VI. Fig. 4.)

ing. He gets into an apathetic state, has no sleep, his pulse flags, pain in the head comes on, irritability increases, and the surgeon then says, "*I think we have given mercury enough ; the patient's constitution requires support.*" Mercury is left off, tonics are given, and the patient *may* slowly recover. I have seen many sink under this fearful agent, thus lavishly and injudiciously given. The mischief and danger are not confined to the primary symptoms ; if secondary symptoms follow, they will assume the most violent form, putting on the phagedenic characters. They will often commence as ecthyma, eczema impetiginoides, or rupia, ending in ulcerations and affections of the bones. Want of space obliges me to omit many cases that I had extracted from my note-book to illustrate these positions ; but I cannot allow the opportunity to pass of alluding to one that is found recorded in Mr. Abernethy's work. The case is detailed under that anomalous term "diseases resembling syphilis," which deserves notice in this place. It "is that of a sloughy sore, treated locally with irritating substances and internally with blue pill, which was discontinued on account of derangement of system. For two months the sore continued to extend ; a sloughing sore broke out at the corner of the mouth, became as large as a shilling ; next a small spot broke out on the ear. A consultation was called on the case, and the surgeons decided upon treating the case by mercurial inunction, and the patient rubbed *in two drachms, by weight, every night and morning, for six weeks.* The sore on the ear healed, *but not the others.*" The further result of the case is not given ; but Abernethy adds, he has met with many similar instances.—("Abernethy's Surgical Observations," vol. i. p. 129.)

I could furnish notes of cases occurring at the present day among Abernethy's former pupils to prove that similar treatment is attended with similar results.

I find in most cases the greatest local benefit from applying a saturated solution of opium to the sore, which should be employed in the manner I have described when speaking of inflammatory chancre ; it is the treatment most generally applicable in all cases. Until I have tried this plan, I never have recourse to the more powerful escharotics, which, however useful they may be to us when called on to treat phagedena in its most severe forms, are often inapplicable, in consequence of the delicacy of the structures implicated, and a fear of destroying important parts. The method of their employment I shall, however, presently allude to in speaking of sloughing phagedena.

The greatest reliance must be placed (and the surgeon will rarely be disappointed) on the various preparations of iron, given internally in moderate and increasing doses ; this is a mode of treatment which is new to English practitioners ; at least iron was scarcely ever given in these forms until M. Ricord, in the early part of 1847, made public his investigations. I have since that period used it largely, and can most fully corroborate his opinions, and recommend it as particularly useful in this country, where phagedena attacks sores more frequently than in France.

On the occurrence of the slightest symptom of phagedena in a previously simple sore, I prescribe iron in the following manner:—

R. Fer. Potass. Tart. ℥j.
Aqua ℥vj.

M. ft. Mist., cujus cap. coch. ij min. ter die.

This solution may be likewise applied to the sore with the greatest local benefit; it will however produce iron-moulds on the linen; and to remove these (of which the patient may complain), I usually recommend the stain to be rubbed over with salt of lemons, and to be then moistened with hot water, or held over a basin of hot water, until the stains disappear.

The citrate of iron may however be doubtless given with advantage, and I dare say all the other forms of iron; but having found the tartrate answer, I have been content to use that remedy alone.

The effect of the iron on the sore is not less remarkable than that on the system; in twelve or twenty-four hours a sore which has been slowly but gradually increasing or remaining *in statu quo*, shows a visible improvement; the yellow tenacious secretion covering the surface of the ulcer detaches itself with facility, the secretions, which before contained but the detritus of the liquefied tissues, become more healthy, granulations are seen less pale and transparent, and show themselves in larger numbers, presenting a rose-coloured or red appearance. The edges of the ulcer lose the dusky hue, become rounded off, and the sore takes the character of a healthy simple ulcer, and cicatrization takes place in the usual way. A patient loses that unhealthy look which anæmic patients have; palpitation ceases, as well as pain in the head, the eye recovers its brilliancy, the appetite returns, and the pulse rallies; in these cases iron seldom affects a patient unfavourably; constipation however must be avoided, and to this purpose, a mild purgative must be given, but no restrictions as to diet are required; if the remedy disagrees, it may be left off for a few days after it has been taken some time; but this is not generally necessary. In the severer types of disease, on the contrary, the dose may be considerably increased, and the iron should not be left off until perfect cicatrization has occurred.*

In speaking of the previous forms of chancres I have mentioned how little a surgeon need fear the occurrence of secondary symptoms. I wish I could say the same immunity attends this form of sore, but a sad experience always makes me distrust the future of such an ulcer, even under the iron treatment. The local disease may recover more speedily than could be imagined, but months after without any warning, rupia may appear, or ulcers break out on the skin or throat or among the hair; in other instances, the first notice of constitutional infection comes on by finding the bones of the nose affected, or the

* Mr. Aston Key, in "Guy's Hospital Reports," vol. iv. p. 465, strongly recommends the iodide of potassium in the local treatment of these cases. I have often seen this remedy employed, and should recommend its use, did I not now know the superior advantage of iron, but still in certain anomalous forms, particularly the ser-piginous, the iodide may be employed. It is, however, I find, most beneficial in the after consequences.

patient suffers from nodes or pains in the larger bones. A very excellent remedy against this form of constitutional syphilis is hydriodate of potash. I never now treat a case of phagedena without ordering iodide of iron or potash after recovery from these forms of primary syphilis, to guard against the consequences. I cannot say, however, that this precaution is always successful, although I have reason to think these remedies are as a rule better than any other.

SLOUGHING PHAGEDENA.

This is not a complication often met with in private practice, and even in London hospitals in the present day the disease is of rare occurrence. The following may be taken as a very well-marked instance of the affection, which I had an opportunity of witnessing at St. Bartholomew's Hospital in the month of July, 1849, under Mr. Lloyd's care. The disease occurred in a female, about twenty-eight years of age, who had lived at Woolwich, and was brought to the hospital with phagedenic sores about the vagina; one of these spread towards the thigh on its inner side; the disease appeared to implicate principally the skin and subcutaneous cellular tissue, and became as large as a cheese-plate, in spite of all the remedies that were used. The edges were very irregular; there was an areola, extending perhaps half an inch from the edge; it was exquisitely tender, of a pinkish or brick-red hue, and could be felt infiltrated with serum. On the inner edge of this areola, the epidermis was raised as in a burn, the skin white, and converted into a substance like adipocere, or what we find in phlegmonous erysipelas; it was however firmly adherent, and was as tough as wet chamois leather, which it resembled. This in about twelve hours would become black, as the parts beyond became destroyed. It was thus that the disease appeared to extend its ravages. Its progress was stopped by pure nitric acid for a short time, and then the areola commenced again, and was soon succeeded by the white structure, which in due course became converted into a black slough. In the centre of this immense sore, above spoken of, the black sloughs had fallen away in the poultice, and pale flabby unhealthy granulations were seen. Nothing had ever struck me more forcibly than the fact (noticed likewise by Mr. Lawrence, see *Medical Gazette*, vol. i., 1849, and 1850) that in some of the worst cases of sloughing phagedena, the general appearance of the patient is totally at variance with the terrible local mischief. You enter a foul ward in London, where such a patient is; the stench is intolerable in spite of all means to remove it; you see healthy-looking girls, and yet on removing the clothes, you notice large sloughing phagedenic sores, that *a priori* you might imagine incompatible with the patient's present condition. In some instances there is a little fever, and the tongue is slightly coated, but this is by no means necessary; and I have seen persons complain only of the local pain, while the tongue has been quite clean during the whole course of the disease; and yet, until proper treatment is employed, the suffering is so severe, that a

patient is unable to sleep ; the disease all the time making great progress.

During the time I studied at St. Bartholomew's, this disease was very familiar to the students. The cases came in great number from particular districts. Before its destruction for the purpose of building St. Katharine's Docks, an alley, then existing on the banks of the Thames, called Swan Alley, used to supply the hospital with victims of this complaint, causing enormous sloughing of the genitals, exposing the femoral artery, and endangering the life of the patient. Sir Astley Cooper says, "Sometimes the labia and nymphæ slough away, and in this way it is so many lose their lives. I visited one day the St. Giles's workhouse, and in a small ward belonging to the medical establishment, I saw seven cases of sloughing chancre ; and of these *seven, five died*. It is almost impossible for them to recover when there is such a destruction of parts. If you inquire into the history of the case, you find that it first began with a few pimples ; the unfortunate female will also tell you that she continued to walk the streets night after night exposed to vicissitudes of temperature ; that she indulged in the use of spirituous liquors in order to support her declining strength. The disease thus occurring in a constitution destroyed by irregularity of habits, the patient has but a very slight chance of recovery. If one of these miserable cases could be depicted from the pulpit as an illustration of the evil effects of a vicious and intemperate course of life, it would, I think, strike the mind with more terror than all the preaching in the world. The irritable state of the patient in which the disease occurs, leads to the destruction of life, and thus it is that such a great number perish. If I said that I saw *twenty* of these cases in a year I should not exaggerate."—"Sir A. Cooper's Lectures," p. 556, sixth edition.)

I lately called at St. Giles's workhouse, and the medical officers assured me that these cases are no longer met with. Many of the lowest haunts of vice are destroyed, prostitutes drink less spirits than formerly, and the authorities would not suffer seven women labouring under phagedena to be placed in the same ward. Lastly, the treatment of these cases is better understood, and the disease not generally allowed to go on unchecked. It is, then, from a combination of precautions that syphilis in its most direful forms has diminished ; let us hope that if during the last twenty years this progress has been made, another similar period will have brought about no less improvements, and that future boards of health will still further check the progress of this fearful form of the complaint, which happily for the poor prostitute, is only now occasionally met with.

At page 61 of my "Treatise on Prostitution," a recent outbreak of this affection is mentioned as having occurred in St. Bartholomew's Hospital, which it was thought necessary to check by closing the wards.

The following cases of this terrible form of disease, which came under my own care, may be interesting :—

In July, 1856, I saw Mr. W——, a tall, thin, delicate-looking, pale man, suffering from this complaint. He had been under the care of an advertising firm, who had given him mercury ; I found him suffer-

ing from great pain and exhaustion, and prescribed opium in large doses, followed by iron. I ordered a generous diet, for he had been kept on the lowest amount of food. In this case the disease ran round the penis; there were two or three yellow or brown spots on the glans, and a slice of the glans came away.

The same symptoms existed in Mr. —, a chemist, who took opium, cinchona, and sarsaparilla, but recovered, and is now in perfect health, with little permanent mischief, though in both cases hæmorrhage was threatened. To relieve the pain and keep up the strength, with due attention to the state of the bowels, is the only treatment requisite.

In these cases, as in most I have seen, the tongue never becomes dry, nor did the head ache, although a great quantity of laudanum was taken; in Mr. W——'s case as much as one and a half-ounce per day was taken.

When this patient had been under my care some weeks, he one day complained of his throat, and on looking into it, I noticed a slough on the back part. There were also a few syphilitic spots on the body. I immediately left off the tartrate of iron he had been taking, as well as quinine, which I had alternated with it, and commenced hydriodate of potash with quassia. The throat immediately improved, and in a week was well. The sore on the penis then took on a healthier action; but even in August it was not well, though there was a great diminution of its size.

There is still much to learn as to the treatment as well as the reason of the slow recovery of these cases. In the majority the diagnosis is doubtful; and though we know that opium is the sheet anchor, when to give iron and generous diet; how long these should be continued; whether mercury is necessary; and when hydriodate of potash should be given—are all questions still open to some doubt, but I hope some day to be satisfactorily answered.

THE DIAGNOSIS.—I can add little to what I have said in speaking of diagnosis of phagedena. I would, however, remark that in private practice we meet with many cases that puzzle the young practitioner much. It is often difficult, if not impossible, to say if induration attends these sores. Called to a case of a patient who has lost or is losing half his penis, with cedematous swelling, foetid discharge, and thickening of the surrounding parts, it is almost impossible to make an accurate diagnosis. Let me give an instance, I could cite many:—In 185—, Mr. — came under my care on account of a sore which took on a phagedenic character, and the prepuce was sloughing. The sore extended, and opium, iron, and tonics were of no avail, and the patient did not rally, although removed out of town. All hope of curing my patient vanished, when secondary symptoms set in on the face and palms of the hands. But on mercury being given, the sores rapidly healed, and the secondary symptoms disappeared. I must admit that in this case I was sorely puzzled at first; I did not suspect that this was a variety of the indurated phagedenic sore described at p. 336, and yet, now on looking back to this case, I see that I ought to have treated it otherwise, and from the first have given mercury, as there was more or less induration. It proves that there are cases which may be very difficult to distinguish; and yet the treatment required by the

one is very different to that fit for the others, but I fear all I could say would not make the diagnosis more easy.

The interest of this case did not end here. Some months later, the patient had another attack of severe secondary symptoms, for which he again rubbed in mercury every second day. The mouth became tender, and although the sore on the penis was then nearly well, and the greater part cicatrized, yet one portion of it became painful and extended, and I left off mercury and recommended iodide of potassium and bitters with the best results.

Here we see mercury curing the secondary symptoms, yet not agreeing with what perhaps might be considered a primary sore on the penis.

In August, 1853, another case presented the following puzzling appearances. Mr. C. came to me with a sore which I feared was indurated; in a few days it began to extend, and took on a phagedenic character; I gave iron, as the sore had now lost the character of induration. It did not get better, and I gave opium; the sore now seemed seated on a raised phagedenic mass, and I determined at once to give mercury, and did so with complete success.

This is another instance of the difficulty we find at one stage of the complaint of deciding between mercury, or iron and opium. Still by using the simpler remedies first, we can avoid the employment of the terrible drug mercury till we are sure it is necessary.

I feel convinced that in this case twenty-four hours before I should not have dared to give mercury, and yet without it the patient would have gone from bad to worse. It is undoubtedly dangerous to give mercury in most cases of phagedena, but there are cases in which it is absolutely necessary.

There are certain constitutions predisposed to phagedenic action. This same Mr. C. has twice had sores which took on phagedenic action, and had to be treated with nitric acid and sarsaparilla. In the case of a brother of his also the secondary symptoms took on phagedenic action.

The practical deduction from these interesting cases, which were watched by me with great anxiety, and seen in consultation with the most eminent men in London, is, that in the diagnosis of phagedena and sloughing phagedena we must always bear in mind that the sore on the penis *may* be an indurated one masked by phagedena, or that it may be a tertiary sore, occurring on the penis just as it may occur on any other part of the body. According as we diagnose one or other affection, the treatment must be different. What is good in the one case may be destructive in the other, and *vice versa*.

The TREATMENT I now pursue when called on to prescribe for a case of sloughing phagedena would be similar to that of the gangrene of the penis, as detailed at p. 314; but, of course, bleeding would be out of the question; removal into pure air or a well-ventilated room would be indispensable, and a local and general application of laudanum, so as almost to narcotize my patients, would be the plan I should follow. The diet should be generous, and port wine should be ordered, and given by a discriminating person, taking care that the stimulus does not bring on too much reaction. As long as

wine was well borne I should continue it, and take every precaution to destroy any offensive smell by the free use of disinfecting agents, and have no fear of infection being conveyed by sponges, as mentioned by Earl. If this treatment did not at once check the complaint, I should not have the slightest hesitation in at once destroying the slough by strong escharotics, and among others, I should use pure nitric acid, as recommended by Lawrence and Welbank. The latter surgeon thus describes the plan: "If the disease is not far advanced, I at once apply the undiluted acid, after cleansing the surface with tepid water, and absorbing the moisture with lint. When, however, there is a thick and pulpy slough, it is better to remove as much as possible with forceps and scissors, before the application is made. The surrounding parts being then protected by a thick coating of lard or cerate, I proceed to press steadily and for some minutes, a thick pledget of lint, previously immersed in the undilute acid, on every point of the diseased surface, till it appears converted into a firm and dry mass. The parts may be then covered with simple dressings, and evaporation kept up by cooling lotions."

"It is always prudent, and often necessary, to remove the eschar at the end of sixteen or twenty hours, when such further measures may be adopted as the case seems to require. When the patients have become perfectly free from pain, and the parts below the slough, on its removal, appear healthy and florid, the sore may be treated as a common wound or ulcer; though I may observe that stimulating dressings are generally most advantageous.* If, however, the patients have suffered any recurrence of pain referred to some particular point, or to the general surface of the sore; whether the affection be slight or severe, and the remaining slough deep or superficial, I should advise the re-application of the undilute acid. The result is, that patients who have known no reprieve from suffering for weeks, and whose constitutions have become greatly disturbed in consequence, within a very short space of time sleep soundly and tranquilly, then fever subsides, and in a few days, we should with difficulty recognise the individuals whom we had before seen subjected to the painful progress of a malignant and, too often, fatal malady."—("Med. Chirurgical Transactions," vol. ii. p. 361.)

At p. 324, I mentioned a very severe case of sloughing phagedena, which was treated by nitric acid. The progress of the disease was checked for the time, but in twelve hours after, the sloughing again re-commenced, although the patient had opium in doses of five grains of pil. sap. c. opio every three hours, with port wine and meat diet; the acid was repeated three separate times, and the opium, even in these large doses, not having disagreed, the tongue remaining moist and clean, Mr. Lloyd determined to give Battley's solution, thirty drops every two hours, increasing the dose during the following thirty-six hours; and it was the opium which ultimately cured this patient, showing that nitric acid will not succeed, although opium will, given (as is often necessary) in very large doses. This case, like others that I have witnessed, induces me then to strongly urge my*readers to

* In this respect I should differ from Mr. Welbank, and should employ the opium solution.—W. A.

prescribe opium early, and employ acid only when other means fail, which I believe will be very rarely the case. As a local application, I would likewise recommend a saturated solution of chlorate of potash (twenty grains to the $\frac{3}{4}$ of water.)

SERPIGINOUS OR CREEPING CHANCRE.

This is a form of chancre, fortunately for the surgeon, very rarely met with in private practice; but there is scarcely a hospital or a ward devoted to the treatment of syphilis which does not contain one or more such cases during the twelvemonth. By this I do not mean to say that the numbers are increasing, for the same patient usually runs the rounds of these institutions, and is turned out at the end of many months, or, after finding no relief from one surgeon, in despair seeks the advice of another, where, unfortunately, as little success usually follows, until, under some accidental circumstance which the surgeon cannot appreciate, the case gets well; whether caused, however, by the remedy, or by some improvement in the constitution, it would be hazardous to say.

COURSE OF THE DISEASE.—In Plate VII. of M. Ricord's admirable work on venereal disease, an excellent drawing of this form of disease is given, and on the thigh is an artificial sore which presents all the characters of the original ulcer. We are told that, on the 24th of July, 1839, inoculation was performed; three days after a pustule was observed, the evolution of which was very slow, and which put on the form of ecthyma. The disease went on uninterruptedly, although the patient six days after (that is, on the 3rd of August) was slightly salivated, in consequence of having taken corrosive sublimate and sarsaparilla, thus proving that this form of sore will occur during the time that the system is under the influence of mercury, and that mercury may not exert any influence on its course, as we see it did not on its origin. To describe, however, the anatomical characters of the sore, I cannot do better than copy those mentioned by M. Ricord in his "*Clinique Iconographique de l'Hôpital des Veneriennes*." He says (September 6th, a month after inoculation had been tried, and nearly seven months from the time the complaint showed itself)—

"A large ulcer existed covering the entire lower surface of the glans, moulding it like the mouthpiece of a flute. This ulceration has destroyed at the same time about half the thickness of the glans, forming the balanic portion of the urethra. The bottom of the ulcer was covered by a species of greyish pultaceous or semi-membranous secretion irregularly disposed, strongly adherent, and pierced here and there (if I may so express myself) by granulations of an unhealthy nature, and of a red, violet, and hæmorrhagic colour. This ulcer, which had reached the base of the prepuce, was surrounded with a ring of firm œdema, but was deficient in specific induration. The edges, cleanly cut, did not present any tendency to become undermined. "In the left inguinal region, a cicatrix of considerable extent and

healthy in appearance was seen ; but at the outer edge of this cicatrix we met with an ulcer exactly similar to the one on the glans, except that its edges were undermined. On the thigh two ulcers exist, the result of inoculation, which had not been destroyed, the first ulcer of considerable size being divided into two portions by incomplete cicatrization. The most minute examination could not discover the slightest trace of secondary symptoms."

During the next six weeks the patient took hydriodate of potash, iodine, and bitters, the sores increasing in size, sometimes a little better, then relapsing again. At the commencement of November mercury was tried, the edges of the sores were destroyed with caustic and brought together with strapping, and at the end of nearly eight months from the time of entering the hospital, the patient left quite well, having taken mercury during more than four months, and having had the sore locally treated with caustic.

DIAGNOSIS.—The obstinacy of this sore serves to distinguish it from all others. By the French it has been called *rongeur*, or nibbling sore, as it quietly and almost invariably destroys the tissue, creeping on extensively on one side while it heals on the other. Here there is no disintegration of tissue, or breaking down and liquefaction of the part, as we noticed in speaking of phagedenic chancre. The secretion of the serpiginous sore is purulent, the base of the sore is firm, there is a little œdema but no induration, the edges are not thin or undermined. The surface of the ulcer is covered with the adherent tough secretion ; granulations are present, though of an unhealthy nature ; there is no dark or livid areola ; but still the disease quietly creeps on, and is not amenable to ordinary treatment. Another characteristic is, that during a week or a month the surgeon flatters himself cicatrization is rapidly taking place, and is all but effected, when the slow destructive process again assumes its sway, under no cause that we can appreciate ; it again becomes checked of its own accord, and again cicatrization recommences.

PROGNOSIS.—No form of sore is so difficult to cure as this, the disease going on in spite of all our remedies. At one period of the year some modes of treatment seem to be very efficacious ; but, perhaps, during the next twelve months the same surgeon will candidly avow that similar means have failed. Its obstinacy is the most prominent feature ; the same destruction of parts as seen in phagedena or sloughing phagedena is not to be dreaded. The serpiginous chancre is a superficial creeping sore ; it does not burrow or extend in depth, but it will travel over a large surface. Rarely, however, is a large surface at once in a state of ulceration, but the sore has a great tendency to creep on by the external edge, forming an irregular ring, which is gradually enlarging ; and in proportion as ulceration creeps on, cicatrization follows, leaving a line or chasm of ulceration, which gives the sore an irregular shape.

The prognosis relative to the occurrence of secondary symptoms is very favourable. We rarely see secondary symptoms follow as sequels of this form of ulceration, however obstinate it may have been. As soon as the ulceration has healed, no subsequent ill effects are to be dreaded ; the general health may remain as good as ever,

and this is the only consolation the surgeon is able to give his patient during the persistence of this tedious form of chancre.

TREATMENT.—Notwithstanding the unfavourable description here given of serpiginous chancre, I should try sedatives, iodide of potassium, and tonics before resorting to more severe remedies. If, however, in a short time no benefit followed, I would recommend tincture of iodine, Peruvian bark, or charcoal, or I should try the result of filling the sore with powdered cantharides. I would next destroy the margin and bottom of the sore with Vienna paste, proceeding gradually from one part of the ulcer to the other, provided it be very large, destroying the surrounding tissues to some extent. This course succeeded admirably in the last case I had under my care. In this instance I adopted the plan of covering the sores, and supporting the parts with strips of ammoniacum and mercurial plaster.

In another serious case of this affection I employed applications of pure nitric acid, and as my patient suffered severely from gout, he took the juice of six lemons daily. In this instance there was the further complication of blotches on the skin.

It will be well sometimes to try a saturated solution of chlorate of potash, $\frac{3j}{\text{to } 3j}$ of water. This treatment may be combined with mercury, given cautiously, and continued for a considerable length of time, bearing in mind that the remedy should at once be left off if it seems to disagree, and recollecting that mercury should be given in reference rather to the state of the constitution than to the special character of the disease. The result of my experience is, that patients afflicted with serpiginous sores bear the remedy well; the firm edge of the sore seldom takes on phagedenic action, nor does the general health suffer. In case of the occurrence of one or the other result, the mineral must be left off, but may be employed again at a later period. My readers must be well aware that I am no indiscriminate advocate for mercury, but experience shows that there is nothing in the local sore which of itself prohibits its use, and I should have no hesitation in trying the remedy, if I believed that without the employment of mercury a cure cannot be expected. I, however, would by no means maintain that mercury is invariably successful. I fear disappointment will often occur; at least I remember cases that have remained uncured in the wards of the most decided mercurialists; whether from the mineral having been injudiciously given, I cannot pretend to say. I do not, however, altogether despair of curing this virulent affection, but trust that, by studying its various phases, we may arrive at more certain modes of treatment than we at present possess. Before concluding this subject, I would state that great advantage may be occasionally derived from perfect rest, and supporting the parts with strapping.

INDURATED OR INFECTING CHANCRE.

If any one symptom of syphilis can be called more important than another, the united voice of the profession has declared it to be, the induration which attends primary sores—a subject well deserving the consideration of those who are called on to treat syphilis in its primary or secondary forms.

Simple chancre, as has been stated above, is not attended by this symptom, and is an affection *purely local*, having *no general reaction on the system and never accompanied by constitutional symptoms*.

On the contrary, indurated chancre, the peculiar and characteristic product of SYPHILIS, is the true infecting sore which not only is accompanied by a special characteristic induration and enlargement of the inguinal glands, but is followed by general contamination of the system, producing what surgeons call secondary symptoms, or constitutional syphilis. Doubts have been expressed by some if the *soft chancre* was properly syphilis. No one has yet expressed such a doubt as to indurated chancre.

HISTORY.—Whatever difference of opinion may exist on the antiquity of the venereal disease, certain it is, that more than three centuries ago—namely in 1514, Jean de Vigo thus described indurated chancre,* and he is the first who pointed out this symptom. He seems, however, to have laid little stress on it, and only casually mentioned it.

From this time we find induration forming one of the symptoms of chancre, and although some authors may have laid more or less stress upon it, and considered it of more or less importance, still its true value was little known. Astruc mentions it among many other diagnostic marks of chancre, but gives us no reason to suppose that he placed that dependence upon it which it deserves.†

Our countryman, Hunter is asserted by some to have first been aware of the value of induration, as a diagnostic symptom, and, in the present day, indurated chancre is often called a Hunterian sore; but such nomenclature is very objectionable, as Hunter only described one form of induration, whereas, as I shall presently show, we meet with several types which are not included in his description. Other authors assert that Hunter did not lay that stress on induration which some have believed. I shall introduce his very words, and let my readers judge for themselves.‡

* "This disease is contagious chiefly if it chance through copulation of a man with an unclean woman, for the beginning thereof was in the secret members of men and women with little pushes of blew colour, with other whiles of black, some time of whitish, with a *certain hardness about the same*, which pustules could not be healed by medicines applyed within or without, but that they would embrace the whole body with ulceration of the generall partes, even returning again after they were healed."—(Translation of Jean de Vigo's works in College Library, Chap. "Of the French pocks not confirmed," p. 253, 4to.)

† "Therefore, all round, orbicular, *callous*, stubborn ulcers, that lie deeper than the skin, are full of white or livid mucus at the bottom, and appear upon the genital parts which we have described, are to be esteemed venereal."—(Astruc on "Venereal Diseases," translated into English. 4to. 1754.)

‡ "A chancre has commonly a thickened base, and although, in some, the common

Evans, Carmichael, Wallace, Babington, and Ricord have successively called the attention of the profession to this symptom, but it is to the latter gentleman we are particularly indebted for having pointed out the vast importance of the symptom of induration, as well as the serious consequences of the disease it characterizes.

Since the second edition of this book was published, M. Ricord has further added to our experience on this most important form of chancre, and in the following pages I shall incorporate with my own the views which he has published in his recent volume, entitled, "LEÇONS SUR LE CHANCRE."

Indurated chancre is a variety

PECULIAR TO MAN.—Whatever doubt there may be as to the transmission of simple chancre to and from animals (see page 272), there is none as to indurated chancre; for it is definitively established after innumerable attempts, that it is impossible to inoculate any species of animals with the *infecting* chancre, so as to produce either the specific pustule or the resulting constitutional symptoms.

DEVELOPMENT OF INDURATION.—A chancre which is about to become indurated, becomes so in a *slow and insidious manner*. The pus of the inoculation appears to require a certain time to prepare the soil as it were.

The indurated chancre does not suppurate much, and the quantity of secretion it produces is small. This secretion is of a serous nature, although sometimes sanious and ill-conditioned

NUMBER OF.—The indurated chancre is most frequently solitary; nevertheless, a patient may present several distinct sores, which come on simultaneously. Ricord speaks of a most exceptional case in which the patient had nineteen indurated chancres.

M. Fournier took notes of 456 cases of indurated chancres, and gives the following results as to the number of the sores in each patient:—

1. Cases presenting only one indurated sore . . .	341
2. " " more than one . . .	115

The latter—viz., where more than one sore was present, were thus distributed:—

Cases of 2 simultaneous indurated chancres . .	86
3 " " " " . .	20
4 " " " " . .	5
5 " " " " . .	2
6 " " " " . .	1
19 " " " " . .	1

115

According to these statistics, an indurated chancre will be solitary 3 times out of 4.

If more than one indurated chancre be present, all will become

inflammation spreads much further, yet the specific is confined to the base."—(Works of John Hunter, by Palmer, vol. ii. p. 316.)

"A thickening of the part comes on, which at first, and while of the true venereal kind, is very circumscribed, not diffusing itself gradually and imperceptibly into the surrounding parts, but terminating rather abruptly. Its base is hard, and the edges a little prominent."—(Loc. cit. p. 319.)

indurated at the same time. It is very rare to see one indurated chancre reproducing itself at later periods on the same individual.

CONTAGION OF INDURATED CHANCRE.—According to the experiments of M. Ricord, the secretion from the sore, after it has become indurated, very seldom produces the characteristic pustule (see page 270). How seldom, will be seen from the following table :—

			The inoculation produced the characteristic pustule in	The inoculation failed in
Of 13	indurated chancres, of which inoculation was attempted during the period of increase		1 case	12 cases
„ 55	Do. while stationary		0 „	55 „
„ 16	Do. during the period of transition		0 „	16 „
„ 9	Do. during the period of reparation		0 „	9 „
„ 6	Do. while gangrene was present		0 „	6 „
—			—	—
99			1	98
—			—	—

We may then assume that a prostitute with an indurated chancre may have connexion with men without producing disease in them. It is only in the very early stages and before induration comes on, that inoculation can take place.

The *Form* which an indurated chancre first assumes is similar to that of simple chancre. Sometimes a pustule precedes the ulceration—sometimes the open sore appears at once.

In other instances, an excoriation following connexion does not heal, although only a slight discharge (which can hardly be called pus) appears. The base becomes somewhat thickened, soon acquires firmness, and may assume a stationary character.

Induration does not depend on extent of ulceration ; on the contrary, the greater the ulceration the less the induration in most cases, and *vice versa*.

In some less common cases, I have observed a moist surface, perhaps as large as a sixpence, looking like a patch of eczema, with ulceration barely observable on it. The base of this becomes thickened, and then indurated ; the surface may cicatrize, leaving only the induration. Some authors admit the imbibition of the virus without previous abrasion. One case, apparently of this kind, has come under my notice ; but I believe it must have depended upon speedy cicatrization of a small sore.

It must not be imagined that these phenomena point to *incubation* as their cause. Experiment directly and abundantly demonstrates that incubation does not exist in the true acceptation of the word. The effects of the virus are really almost immediate, but the initiatory symptoms are very slight, and easily escape any but an experienced and attentive eye, and, in general, pass completely unnoticed by patients. It should be remembered too that the infecting chancre is

an ulceration *essentially indolent*. It generally makes its appearance, establishes and extends itself, without provoking the least painful reaction. The patient, who is naturally inclined to judge of the severity of a complaint by the pain it causes, thinks the ulceration only an insignificant excoriation or a mere scratch, to which he pays little attention. In many instances it may escape notice altogether.

PERIOD OF APPEARANCE.—It is generally about the fourth or fifth day after connexion that the induration first begins. It then remains stationary or increases very slowly in firmness, till *the sore* assumes the appearance we shall presently describe.

Ricord says he never saw induration come on till the chancre had existed for three days at least. After three weeks we rarely find induration; indeed, if it does not come on within that period, the patient may consider himself free from all danger of it. It has, nevertheless, in a few cases been known to have appeared in persons who have had sores for months. (See note, page 321.) As to its duration, when it has once commenced, no one can say how long it will last. I have seen it continue many months.

THE ASPECT to a person accustomed to minute observation differs widely from that of simple chancre. In the indurated sore the surface of the ulceration is more shining (*lisse*), and less velvety than the simple sore, which, as was remarked at page 270, generally presents an irregular floor, like honeycombed tripe or wash leather. As the disease progresses, the ulcer becomes of a greyish tint, like bacon, but preserves, at the same time, a close-grained shining raylike appearance. The edges are usually polished, and shining as if varnished.

DESCRIPTION OF INDURATION.—The induration surrounds the ulcer on all sides, extending at once beneath and around it, forming a sort of bed for the sore and encircling it with a kind of margin which connects it with the sound parts. The induration is produced without any surrounding inflammation, and when fully formed is like a kernel or foreign body placed under the skin. To the finger it has a feel *sui generis*, which once known cannot be mistaken. It gives the sensation of an elastic tissue utterly different from the hard œdema that is set up around common ulcers, and from the tissue of cicatrices. Although the terms *induration* and *hardness*, which we are compelled to use in different senses, are really synonymous, the realities they express are very distinct. It should be clearly remembered that the *cartilaginous resistant elastic induration* of the indurated chancre, and the hardness of inflamed tissues or that of cicatricial-tissue resemble each other in nothing but the terms used to designate them.

Bell compared this induration to the half of a dry pea placed beneath the ulceration. This is in fact the form which it very frequently assumes, particularly when the indurated chancre is developed on homogeneous tissues. The simple and indurated chancre differ not only to the touch but to the eye.

The simple chancre looks as if it had been punched out, its edges being, if anything, rather lower than its centre. The indurated sore, on the contrary, is saucer-shaped, with its edges higher than the

centre. The edges of the simple sore are also generally detached, while those of the indurated variety are always adherent.

These leading characteristics, however, are liable to some variations, which I now propose to specify.

VARIETIES OF INDURATION.—If the implicated tissues yield unequally in the different parts of the circumference of the sore, the plastic infiltration which constitutes induration, is produced in an irregular manner, and accordingly takes on different shapes. It may assume an elliptic form, or the figure of a cock's-comb, or it may raise the chancre unequally on different parts of its surface. Sometimes again, the induration, which is particularly marked at the edges of the ulceration, is completely absent at the centre, so as to present an annular form. In other instances, in place of spreading deeply and diving down, as it were, into the tissue, it remains quite superficial, doubling the ulceration upon itself without penetrating deeply; so that on seizing the chancre between the fingers, the ordinary hemispherical form or split-pea shape cannot be detected. All that is felt is a *surface induration*, which can be compared to nothing better than a piece of parchment placed under the base of the chancre. On this account I call such form the **PARCHMENT INDURATION**. This superficial induration often escapes notice. Indeed, a somewhat practised touch is necessary to detect it.

COMPLICATIONS OF INDURATION.—Although the appearance of infecting chancre is not generally attended with inflammation, there are instances when an unusual degree of reaction is set up around the sore, which assumes all the characteristics of phlegmasia. The peripheric tissues become tumefied and cedematous, and then the base becomes indurated, the ulceration being so implicated that the specific induration is, as it were, amalgamated with the inflammatory engorgement. The diagnosis in such a case is very difficult, and sometimes almost impossible. (See page 326.) We must in such instances wait for the engorgement of the tissue to disappear, which it will generally do in the course of a few days. The induration can then be detected even before the inflammation has completely subsided, becoming more and more appreciable in proportion as the tumefaction diminishes.

In other instances, when the case has been neglected, or if the indurated mass has been subjected to friction, ulceration will occur. Indeed this will be the probable result of stimulating applications, or anything tending to cause excessive inflammatory action, or unusual rapidity in the formation of the induration. The distended cellular tissue will be as it were incarcerated within the areolæ of the infiltrated dermis, and cause mortification of the part, as seen in Plate VI. Fig. 4. Lastly, the indurated sore may be covered with granulations seated on a hardened base, putting on the characters of the *ulcus elevatum* of Evans, or it may assume the form of condylomata.

SITUATION OF INDURATION.—Indurated chancre may appear on *any part of the body*. Simple chancre, as has been noticed page 276, is confined to certain regions. Indurated chancre, on the contrary, may arise anywhere and everywhere; for it seems that every portion of the body is equally adapted for its growth. The mucous membrane is no more exempt than the skin. It is frequently met with on the vulva,

on the glans penis, or the preputial fold. It is constantly present on the lips, tongue, conjunctiva, pituitary membrane, on the cervix uteri, in the vagina, at the anus, and within the rectum. It seems probable that the mucous membrane of the digestive canal beyond the pharynx and above the rectum is equally liable to be affected, but no case of the kind has come within my personal knowledge. It has been attempted to produce inoculation on the stomach by swallowing the pus of the chancre in the form of a pill, but without success. Such an attempt, however, is far from fulfilling the conditions necessary for contagion. But although indurated chancre will appear anywhere, yet some situations are undoubtedly more favourable to it than others. In some positions induration is limited and disappears readily; in others it assumes an exaggerated form. Thus on the mucous membrane of the vagina, or the carunculae myrtiformes, at the anus, the base of the chancre does not become that exaggerated indurated mass which we find when it occurs in the fold between the glans penis and prepuce. In the former situation it is the *parchment chancre* that is most generally met with, in which the induration most rapidly disappears.

CAUSE OF INDURATION.—Inoculation of the virus in every form of chancre has now clearly established the fact, that *induration is not a necessary consequence of syphilis*. However, it so frequently attends the complaint, that the inquiry under what circumstances it is most frequently observed, deserves close attention. It might be expected that surgeons of large experience would have been able to point out the influence of various external agents on the causes of induration, but unfortunately observation furnishes little information, and that principally of a negative character.

Induration is very frequently observed in those parts of the system which are most freely supplied with loose cellular tissue; we meet with it very constantly in the prepuce, very rarely on the glans, though it is very common in the folds between the prepuce and glans.

Neither *sex, age, constitution, nor season* appears to affect it. I have met with it as well in very early infancy, as in persons of sixty. I think it occurs perhaps oftener in the male than in the female.* But I find it in the bloude as well as the dark-haired, in the scrofulous as well as in the healthy, in the patient who comes from the country as well as the resident in town. Nor do I notice that season causes any difference. It seems as common in the summer as the winter.

Climate, however, would seem to exert some influence upon it. In a lecture recorded in the seventh volume of the "Provincial Journal," p. 23, M. Ricord is reported to have said, in 1834, "My excellent and learned friend, Mr. Carmichael, a highly competent authority in syphilitic affections, examined with me the patients of my wards

* In the male venereal hospital at Paris it is a very common affection, see page 333. Among the female patients in Paris, on the contrary, it is rare. Secondary symptoms, also, much less common among prostitutes than might be expected. Women have no immunity from indurated chancre, but it is a fact, as appears from the statements of M. Boys de Loury, that many women escape, although exposed to contagion.

(wherein you will acknowledge there is no dearth of the various symptoms) without once finding an instance of what he calls true chancre."

This statement induces the belief that indurated chancre was an uncommon symptom in 1834. In September, 1847, I wrote down the following observations in my note-book, on my return from this same hospital, during my visit to Paris.

First on the list, as regards the frequency of the affection, stands indurated chancre, which presented itself in twenty-three cases out of the 112 patients then in the wards. In ten cases it was the sole symptom; in thirteen cases it was attended with secondary symptoms.

My recollection carries me back twenty years, when I was a student under M. Ricord, and I do not believe that induration was then such a common symptom as it appears now. On stating this to the professor of the Hôpital du Midi, he admitted it in part, but seemed to think it might be a coincidence, or an accidental circumstance, depending upon his present house-surgeon admitting, by preference, sores that presented an indurated character. I am, however, disposed to view the circumstance as singular, and worthy of further consideration; it is another of those many facts relative to induration, of the cause of which we are in perfect ignorance.

In returning to Paris in September, 1850, the same large proportion of indurated chancres occurred; out of the 112 patients then in the wards, thirty-three presented unequivocal and well-marked indurated sores.

In 1858, the proportion of indurated chancres was so large, and the interest in the phenomena of induration was so great, that Ricord kept a ward expressly for the admission of indurated chancres, and M. Fournier states that during the year he was surgeon to M. Ricord he took notes of 456 cases of indurated chancre. (See page 333.)

Wilde, in his excellent work on "The Institutions of Austria," calls the attention of the profession to the immunity of the Austrians from indurated chancre; and we have statements, that the same is the case in other southern climates, and that secondary symptoms are very uncommon. If the latter be true, indurated chancre must *à fortiori* be rare. Writers have not however been generally aware of the importance of this, the common antecedent symptom.

In passing through the wards, or in seeing the out-patients of London hospitals, a great difference will be found in the number of indurated chancres, and it occurs to me that the immunity in some institutions may depend upon the treatment. Thus, in procuring indurated masses to examine, I have in vain sought for them in the practice of those who give five grains of blue-pill night and morning to all forms of primary sores. I have met with them in larger abundance in institutions where mercury is not so indiscriminately given; and I believe treatment in this country has a great influence in preventing the development of induration.

Among other causes of induration, the treatment of primary sores has been supposed to play a considerable part. Irritating applications, caustic, &c., have been accused of producing it. It is true that we meet with induration after the application of caustic; but it also

follows water-dressing, black-wash, the most simple ointments, or even when treatment has been neglected altogether.

The constitution of the patient has been said to contribute to induration, and at one time I was disposed to believe that the clear complexion seen in scrofulous individuals was a sign of a constitution peculiarly predisposed to the indurated form of chancre; but I have met with so many cases in persons who have thick complexions, and who have red or dark hair, that I have given up this idea. It is a curious fact that a man may contract chancre at one time of the year, and it will not become indurated; he may recover, and in a few months contract disease again, and the sore will then be characterized by induration. Such cases might almost lead one to agree with Mr. Carmichael in the existence of a plurality of poisons, but observation on a large scale contradicts such an idea, and corroborates the result of our experiments on inoculation—viz., that the syphilitic poison is one and the same, modified according to the constitution it attacks. For example, we find instances of a male with an indurated ulcer communicating to a female a simple unindurated sore, and *vice versa*: this is not to be explained on the supposition of a variety of venereal poisons.

Authors, as I stated above, have almost entirely neglected to give any opinion on the presumed

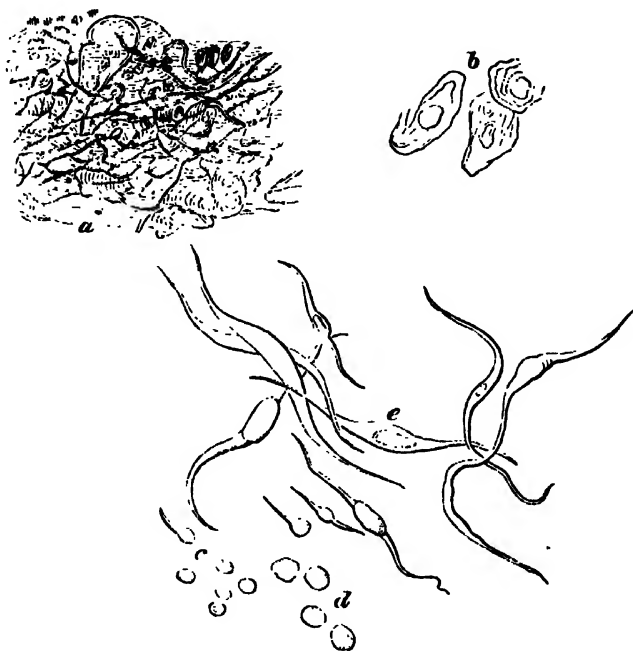
NATURE OR OBJECT OF INDURATION.—Wallace forms nearly the only exception, and he calls induration “a protective process, or one of those processes that are set up to limit the effects of the venereal poison, and to repair the injury of texture which may have resulted from the action of this poison.” (Page 306.) I was once disposed to believe that such might be the object of induration; but experience proves that the interstitial deposit by no means limits the effects of the venereal poison, as secondary symptoms invariably follow; however, induration appears to modify the local spreading of sores when it comes on in the early stages of chancre; but let it be remembered that we are unable to produce induration, or to remove it rapidly. It occurs in some, not in other instances; it is *almost* specific and peculiar to the syphilitic virus, and does not usually attend any other form of sore. When present, the ulceration generally does not spread, probably on account of this barrier to its progress; but may not the same cause which occasions this interstitial deposit check the spreading of the ulcer? Wallace himself, in the next page, says, “Now, it may be asked—What is the immediate cause of that excess of interstitial deposit which characterizes indurated primary syphilis? It must be answered, that in many cases we do not observe the operation of any adequate cause, and we must attribute it to some peculiar character of constitution; but on other occasions, the influence of artificial applications in exciting induration is very obvious.”

After what has preceded, I fear we can do no more than conclude that induration is one of those vital processes dependent upon causes of which we are at present ignorant, and be content at present to watch its development, in the hope that one day some additional light may be thrown upon this part of pathology.

MICROSCOPICAL EXAMINATION OF INDURATION.—In the hope that the microscope might clear up all doubts on the true structure of

induration (which, as shown in the preceding pages, is peculiar to chancre, never attending any other form of sore, except as a very rare and accidental symptom), I carefully, in 1846, removed with the knife masses of induration in its various stages, and immediately forwarded them to Mr. Busk, whose researches by means of the microscope are so well known, and that gentleman has favoured me with the accompanying drawings and descriptions.

M. Lebert, of Paris, subsequently examined indurations, and has fully corroborated Mr. Busk's investigations.



INDURATION OF CHANCRE.

a. Section, showing the fibrous stroma, with granular albuminous deposit, 150 diameters; *b.* Epidermic scales; *c.* Blood discs; *d.* Free nuclei; *e, e.* Caudate cells (fibro-plastic); *b, c, d,* and *e,* are magnified about 300 diameters.

The microscope however has added little to our previous knowledge, the caudate or fibro-plastic cells delineated under letter *e e*, "are (as Mr. Busk himself says) found pretty generally where reparation or cicatrization is going on, and cannot consequently be themselves regarded as a peculiar element in the induration of chancre, or as indicating more than the great efforts nature is disposed to make to limit or prevent the absorption of the syphilitic poison. All therefore, so far as I know at present, that can be said with regard to syphilitic induration, is that it does not present any special element distinguishing it from other cicatricial indurations. But there still remains to be explained, what peculiar property in the syphilitic virus produces this induration. It is impossible also to say that the caudate corpuscles may not have something of a special nature, for their mere resemblance to similar corpuscles occurring under other circumstances, would not logically prove the identity of the two, when it is

considered that all morbid growths of a self-propagating nature are made up in a great measure of nucleated cells, among which, except in size perhaps, it would not be easy to determine any very marked differences."

Modern writers and microscopists have added nothing to the descriptions of the indurated sore, which I first published in 1846. The field of inquiry is still open to any who feel inclined to follow in this interesting path.

ANATOMICAL CHARACTER OF INDURATION.—Ricord, in his recent lectures on Chancres, says induration is seated in the thickness of the skin or mucous membrane, or in the cellular tissue which lies beneath them. It seems to affect by preference the lymphatic system, and it is generally believed to arise from *effusion of plastic lymph into the absorbent vessels, and the surrounding cellular tissue*. It is, in fact, a sort of capillary lymphangitis. It is noticeable that induration is produced most copiously in situations where the lymphatic system is most fully developed, where the network of absorbents is closest. By means of the lymphatic system it extends and propagates itself.

TERMINATION OF INDURATION.—It is nearly a universal rule that the induration, when left alone, continues till long after the disappearance of the ulceration.

When, however, mercury is given in the manner hereafter to be recommended, a very peculiar effect is produced on the induration; the circumference of the indurated mass becomes redder than usual; there seems to be increased action of the vessels; the transparency becomes less and less, and absorption of the interstitial deposit rapidly takes place, particularly if the callous mass has existed only a short time.

During the progress of absorption, its elasticity is gradually lost; it becomes *gelatiform*, and then after a time it disappears altogether, sometimes leaving on the spot it occupied a deep violet stain, somewhat depressed like a cicatrix in the thickness of the dermis. In some cases, the induration disappears under treatment before the ulceration has healed, but this is an exceptional case, and in other instances months, even years, may pass before the induration is altogether lost. Ricord mentions an instance in which he discovered traces of induration thirty years after the healing of the chancre.

It is a curious circumstance, that after having diminished, or even disappeared, the induration may augment or reappear all at once. These relapses are rare; but it is certain that induration does sometimes, after years have passed, reappear in the old place. In one case that has been under my care, the patient never exposed himself to fresh contagion, but an old spot that was once the seat of induration became again thickened, and put on some of the characteristics of specific induration.

In a late lecture M. Ricord calls attention to the enormous extent to which induration may increase, even so far as to occupy the whole of the base of the glans, and give rise to the idea that the patient was suffering from cancer, instead of indurated chancre.

When the induration has disappeared, not unfrequently we see on the skin a round stain, of a brownish bronze colour, very characteristic,

and which is not met with in simple chancre. This is due probably to some specific alteration in the pigment.

CONSEQUENCES OF INDURATION ON THE SYSTEM.—Induration is not the only characteristic of this form of chancre. Its chief quality is its power of *infection*. It, and it only, creates a diathesis, and becomes a constitutional affection. The outward manifestations of this constitutional diathesis are usually known as secondary symptoms. When induration is once set up, it will be invariably followed by these secondary symptoms. Six months will not pass without their appearance. They occur at a certain period, well ascertained by those who have studied the disease, and in a regular order. The characteristic eruptions on the body, the sore throat, the pains in the limbs, &c., which will be fully described under the head of secondary symptoms, follow each in its place and each at its regular time.

Comparing the apparent slowness of the initiatory symptoms of this form of disease, and the fearfully serious results to which they lead, we naturally ask

HOW IS THIS DIATHESIS PRODUCED?—I must admit my ignorance. Clinical observation only teaches us the fact, the *modus operandi* is as yet undiscovered. How this specific form, so comparatively slight in its first operations, is transfused into the different tissues so as fully to infect the whole economy, and there produce consequences so different and so aggravated, we do not know.

We have no means of detecting the specific poison in the solids or the liquids of the sore. They have no power of inoculation, notwithstanding all that has been advanced to the contrary, and the power of communicating the disease is lost as soon as the local sore is healed. The blood taken from the veins in the neighbourhood of the sore contains no new or altered element that can be detected by our chemical investigations. The only apparent difference is a greater proportion of albumen, and a diminution in the number of the red globules, both of which symptoms characterize other ailments.

Still the system *is* contaminated, and our form of expression is that a poison has been conveyed into the constitution, and that the first result is the local induration, but the real explanation of the matter we do not know. Nor can the closest observation detect the smallest change either in the constitution or the effect of the secretions coming from infected individuals; as agents or communicants of infection to others they are altogether powerless.

This is the natural course of things in persons who have undergone no treatment. Observation, however, teaches us that treatment may considerably modify this constitutional affection or diathesis, as we call it. Thus mercury *may*, if judiciously given, and if persisted in sufficiently long, completely guarantee the system against any such general poisoning. It *may* cure the diathesis when established, or it may only remove it for a time.

Another important and interesting question is :—

CAN A MAN HAVE TWICE IN HIS LIFE AN INDURATED CHANCRE.—Indurated chancre, as has been stated, creates a *diathesis*. It seems almost a law of virulent affections which completely infect the constitution so to alter the animal economy in some hidden way, that the

same or a similar virus will not again produce the same phenomena in the same individual, at least, until the effect of the infection has completely passed away. Thus vaccination for a time prevents vaccinated subjects from being again influenced by a new inoculation of the same disease or by the similar disease of small-pox. So one attack of small-pox itself generally guarantees from a second, as is also the case with measles, scarlatina, &c. This law is so universally acknowledged, that where relapses have taken place, the strictest pathologists have preferred to seek an explanation in the *extinction of the special diathesis* rather than admit an accumulation of diatheses. For instance, it is because, as has been supposed, the vaccine influence after a time wears out, that a subsequent vaccination becomes necessary. What vaccination and inoculation do for vaccine and small-pox, an indurated chancre does for syphilis. In producing the constitutional complaint, it protects the system against a second attack. The general, I may almost say the absolute rule is, that indurated chancre *is not liable to a relapse*. Ricord, however, adds, "I do not deny the possibility of a relapse of an indurated chancre. On the contrary, *I believe in it*, although clinical observation has as yet given me no proofs of its existence." This cautious opinion of M. Ricord's of course depends on the previous extinction of the diathesis.

Typhus fever, small-pox, and other eruptive fevers we know *may* occur twice. The influence of vaccination may wear out after a certain time, as is proved by the success of re-vaccination, and more severe attacks of small-pox after vaccination in adult life, showing a new receptive power of the organization.

The syphilitic diathesis is not exempt from this possibility of modification or extinction. Consequently, since *it can wear out, it can be reproduced*.

My own experience certainly is, that induration will not occur (as a general rule) twice in the same individual, but that as an exception it may be met with I am certain. I may cite the following instance, which made a great impression on me at the time.

Mr. R., in 1852, suffered from an indurated sore which got well under mercury, but secondary symptoms followed. In March, 1853, he showed me, on the spot where the indurated mass had been, two hard, thin, scale-like indurations, which were slightly cracked. The question was, whether this was a second indurated chancre, or was it a new action set up in the old sore. As it did not get well with simple means, mercury was given, and was persisted in for six weeks. As the case did not progress, mercury was left off, and the patient had no other attack of secondary symptoms. In such cases I do not now give mercury, but iodide of potassium.

I had lately under my care a gentleman who suffered from a slight indurated chancre, resembling a silver penny, under the skin of the prepuce, and this was followed by secondary symptoms of a very obstinate character. Yet this patient assured me (and I believe his statement) that eight years before he laboured under chancre followed by sore throat, with spots on his body, which were called secondary, by his then medical adviser, and yielded readily to small doses of mercury, which salivated him, but he had relapses. (See page 365.)

I am acquainted with another gentleman who no sooner has connexion than on the site where he had many years ago an indurated chancre (which was followed by secondary symptoms) a thickened mass arises, intractable to ordinary treatment, but disappearing under the internal administration of iodide of potassium, which seems to have a specific effect on it. Yet after no one of these repeated indurations (except the first) has he suffered from secondary symptoms. The simple ulcer *exhumes* (as it were) *the primitive induration*, but not its specific character.

It should be remembered that though the occurrence of indurated chancre protects from sores of the same character, it is no guarantee whatever against soft chancre, which may occur as often as the patient exposes himself to contagion. Dr. Lindmann, as stated at p. 275, inoculated himself more than 2000 times.

M. Ricord, at p. 167 of his "Lectures on Chancre," adopts this view of the subject. He says that there is in these cases no true induration of the base of the sore or enlargement of the glands in the groin, and that this bastard form of induration resembles both in aspect, form, and consequences, the soft chancre.

BASTARD INDURATION.—The cases we have now to consider are not those instances of well-marked genuine masses which are delineated in Plate VI. Fig. 4, and described at p. 340. There is no mistaking these, and they have been fully dwelt upon.

What is called bastard induration may arise from some local irritation, which gives rise to a thickening of the sore. Thus a little piece of corrosive sublimate placed between the glans and prepuce will set up a temporary indurated sore, the aspect of which might deceive the most practised eye if other signs were neglected. Nitrate of silver, also, if frequently applied to sores, will produce this fictitious induration, as well as various other irritating applications.

Doubtful cases of this spurious induration do not generally occur, as far as my experience goes, except in persons who have already had indurated chancres, followed by secondary symptoms. These cases often present some strange anomalies. Frequently, as stated at p. 343, this fictitious induration may be again set up in the site of the old indurated sore, which had long ceased to give evidence of its existence.

Captain — some years ago, came to me with chancres, which I cauterized. Induration came on, and did not yield to simple treatment. My patient was a very delicate individual, but I *then* considered myself justified in rubbing in mercury, and the induration rapidly got well. I left off the mercury as soon as I learnt from my patient that he had had (as he phrased it) syphilis on the palms of his hands some few years previously.

Another gentleman consulted me on account of a sore that did not heal. I gave him mercury; the induration rapidly got well in this case. I left off the mercury immediately, but in neither instance did any secondary symptoms follow. I believe that both these cases were instances of bastard induration. I should now treat them with iodide of potassium and compression of the sores with ammoniacum and mercurial plaster, as recommended at p. 351, and should expect to cure them more thoroughly and expeditiously than with mercury.

COMPLICATIONS.—Indurated chancre is attended with fewer complications than most other forms of primary syphilis. As above observed, inflammation rarely interferes with the course of induration.

It nevertheless sometimes happens that the infecting chancre undergoes the complication of phagedenic action. In these cases the induration extends and burrows; the very centre of the plastic exudation in the first place becomes a prey to the phagedenic action. At this stage the chancre loses what is generally the characteristic sign of infection—that is to say, its indurated base. This is a frequent cause of error. (See p. 326.)

One of the most common and tiresome complications is a general or partial thickening of the prepuce, preventing the patient from retracting the foreskin, thus allowing the secretion to accumulate, particularly if the indurated masses are at the orifice.

In some cases the sore, instead of healing from the circumference, will become converted into a spongy granular surface, looking like a large condyloma; and thus a primary symptom is changed *in situ* into a secondary symptom. In other instances irregular cicatrization will follow, and the granulations becoming exuberant, an ulcer, called by Evans *ulcus elevatum*, results, and which requires cauterization before it will heal.

Suppurating bubo seldom becomes a complication of indurated chancre, but induration is, as we shall see at p. 346, almost always followed by an enlarged state of the inguinal glands. This is so common, that in cases of difficult diagnosis M. Ricord decides upon a sore being truly indurated by the occurrence of enlarged glands in the neighbourhood. In proportion as this enlargement is rare in phagedenic chancre, it is common in the indurated variety. This enlargement takes on, like the sore, a very chronic form, and vanishes only with the disappearance of the ulcer.

DIAGNOSIS.—After the description previously given of induration, it may seem almost unnecessary to dwell on diagnosis. Experience, however, shows that the tyro in venereal diseases cannot at once decide on the nature of induration. Frick, of Hamburg, placed some corrosive sublimate between the glans and prepuce, and asserted that induration, similar to that following true chancre, was observed. M. Ricord admits the fact of mere induration being thus produced, and states it to depend upon plastic infiltration. It is, however, now well known that such induration will disappear as soon as the irritating cause has been removed, and hence the diagnosis will be easy.

In practice, sores will present various shades of more or less doubtful induration or hardening, which get well without mercury, and are unattended with secondary symptoms. Thus we may have hardness of the canal of the urethra, caused by effusion of plastic lymph; we may likewise have the lips of the urethra infiltrated and hardened, giving us reason to suppose that indurated chancre may exist; and we may meet with a form of induration following irritating applications, which however rapidly disappears when soothing treatment is prescribed. We likewise meet with cases of encysted chancre and œdema, which assume some of the characters of induration. All this shows, however, that there is a form of fictitious or bastard indura-

tion (see p. 344), which it is of great importance to distinguish from the true form.

The two following instances show how dubious these cases sometimes are.

An artist, after observing sores on his penis, showed me a discharge which was attended with what I thought was specific induration, but it went away under ordinary treatment. Mr. L. was under my care in 1847 with indurated chancre; I treated him with mercury. In October, 1851, he returned suffering under fresh sores. At this time the orifice of the urethra had become indurated. He took iron for the other sores. In neither case could I detect enlargement of the glands.

In August, 1852, a patient showed me an indurated sore at the orifice of the urethra, opening below the glans, as he was a hypospadian. The history is this. Eight months previously, he came to me with most severe secondary symptoms. Under the influence of corrosive sublimate taken for a long time he got well, when a little sore subsequently appeared at the orifice of the urethra; this I treated with astringents. In a month he came to me with the sore looking like an indurated sore; it was quite as hard, and something like a condyloma or phagedenic indurated sore. I gave him iodide of potassium.

I think it is of considerable consequence not to wait too long to test the nature of the induration. I am now of opinion (1860) that if induration is allowed to progress, it requires much more mercury to get rid of it than in its commencement. Fortunately, however, for the surgeon the diagnosis does not alone depend upon the condition of the induration. A positive opinion may be drawn from the indurated condition of the inguinal glands, which I will here shortly notice.

The indurated bubo consists of a *tumefaction, remarkably hard and indolent, of the series of glands seated in the groin.*

These glands, enlarged in volume, present themselves most frequently under the form of a *series* of little ovular tumours, very hard, independent the one of the other, and moveable on the parts which surround them. These tumours are strictly speaking *indolent*, giving no pain even when pressed. The only reaction they produce arises from the pressure they exercise on the surrounding tissues. They are *very hard*, and their hardness produces a characteristic feeling. To the finger they present exactly the same sensation of elastic hardness as the indurated base of an infecting chancre.

These little tumours are completely *independent* one of another; they do not run one into the other; neither are they lost in the tissue which surrounds them, on the contrary, they roll under the finger.

Several glands are usually affected, instead of only one, as with simple chancre. Indeed, the whole series of the glands of the affected region are more or less implicated, though the gland that is more immediately in communication with the lymphatic vessel that comes from the sore is more indurated than the others. Not unfrequently, also, the glands of both groins become affected in this way. They seldom become larger than a small nut, nor do they often become inflamed or suppurate, except in consequence of some external cause. Thus out of the large number of indurated chancres treated by M. Ricord in

1856 only three were accompanied with suppurating buboes. In these cases the suppuration followed a strumous degeneration of the glands. Two attempts were made to inoculate with the pus from the swelling, but without effect. This peculiar form of bubo belongs exclusively to the infecting chancre, and as stated above, its presence will assist the diagnosis between the simple and indurated chancres in the doubtful cases that occur in practice. "Depend," says Ricord, "on this diagnostic mark, and you will never be wrong."

It will make the distinctions between the two forms of chancre clearer to give them in a tabular form.

Table showing the Differences between SOFT and INDURATED CHANCER.

SOFT CHANCER.

Appearance, grey; bottom torn and honeycombed.

Edges irregularly eaten away, undermined to some extent, and everted.

Ulceration, convex, as if made with a punch, the edges being a little lower than the centre.

The *base* of the ulcer soft.

The *glands in groin* acutely inflamed, but only one attacked at a time.

Secretion abundant.

Ulceration lasting from five to eight weeks.

Phagedenic action may often come on, and destroy a large portion of the surrounding tissue.

If the *local* characteristics are thus insufficient, refer to the original source from whence it was taken, and if that was a soft chancre, so probably is this.

On a *previously infected constitution* (terrain diathésé), the inoculation made with the pus of a soft chancre (whatever be the source it comes from) always succeeds.

Soft chancre is very common.

This sore will or may be reproduced an *indefinite number of times* on the same individual.

INDURATED CHANCER.

Appearance, glazed; the bottom grey, looking something like bacon; very little honeycombed; of a brownish colour.

Edges sloping gradually towards the centre of the sore; adherent.

Ulceration, concave, or saucer-shaped, the edges being a little higher than the centre.

The *base* of the ulcer indurated.

The *glands in groin* swollen, indolent, and hard, more than one being in this state

Secretion scanty.

Ulceration lasting from four to six weeks.

Phagedenic action rarely attacks the indurated sore, and confines its action to destroying the hardness alone.

If the *local* characteristics are insufficient, refer back to the original source, and if that was indurated, this, *probably* (see p. 290), is of the same character.

On a *previously infected constitution* (terrain diathésé), inoculation made with the pus of an indurated chancre (whatever be the source it comes from) always fails.

Indurated chancre is comparatively uncommon.

This sore will occur *but once* (see p. 343), in the same individual during his lifetime.

PROGNOSIS.—The *local* prognosis of indurated chancre might be considered favourable, inasmuch as it generally has no tendency to extend, but is limited, and *may* in a few days run through its course and disappear. But although this may occur, the local consequences may likewise turn out very serious. In the first place, as I have above shown, the sore will not be likely to heal, but tend to remain in *statu quo*, or the ulceration or induration be likely to increase, and the duration of one or both may be almost indefinite. I have seen induration last many years. If it heals, the cicatrix is liable to take on ulceration on the slightest cause, and a very intractable sore results. The general consequences are no less to be dreaded: a few weeks only will elapse before secondary symptoms may show themselves, attacking the skin or mucous membrane, and even if cured, will probably be followed by relapses. It is very true, that unless the case is mismanaged, neither rupia nor phagedenic affections of the throat will generally follow these indurated sores, but the patient will again and again (perhaps for years) suffer from chronic affections of the skin.*

Such is the course of the disease when the indurated chancre is allowed to run its course, as may be witnessed in the practice of those who refuse to give mercury. The prognosis of indurated chancre is somewhat more favourable in the cases where mercury is given, but even in these cases (unless the mineral is continued for a long time) relapses are very common; for when once an indurated chancre has attacked an individual, no surgeon can say that secondary symptoms will not occur, even in spite of the treatment hereafter to be recommended.

The writer who takes the most sanguine view of chancre is the late Mr. Key, in the *Guy's Hospital Reports*, vol. iv. At page 426, he says, "When combined with the other evidences of poison, induration is of some value in determining the nature of the sore; but alone, it is indecisive of the poisonous character of an ulcer, especially when seated in the cellular membrane deep beneath the cutis. . . . The deep chronic chancre of the corona glandis, mild in its character, and usually harmless in its effects, will last for months, and acquire a degree of induration that gladdens the heart of a *soi-disant* disciple of Hunter, grieved to find the good old chancre fast disappearing from the land." Almost all other authors that I have consulted agree in the importance of induration; but I have introduced Mr. Key's words, that my readers may hear both sides of the question. Remembering the doubtful cases given above under the head of diagnosis (page 346), his views will perhaps be found pretty nearly to coincide with those of other practical writers.

Ricord's expressions are, "The chancre that becomes indurated is no longer a local complaint; it is the initial expression of a diathesis, it is the commencing link of a constitutional affection, the preamble of syphilis. In simple chancre it is the ulceration which constitutes the disease. In the case of induration the ulceration counts as

* These eruptions are usually found to be scaly, and attended with sequelæ, which seem to be connected only with induration. I believe that Mr. Carmichael is entitled to the credit of having called public attention to this view of the subject, which subsequent experience has confirmed. (See "Carmichael's Clinical Lectures," p. 161.)

nothing. The true complaint is in the infection of the organism. Induration is the commencement of the infection, it is the first effect of the general poisoning. From the moment it is produced, syphilis is acquired.*

"Induration is less a cause than a consequence of the constitutional infection. It is a sort of reaction of the general poisoning; it is (if the expression may be used) *the first of the secondary symptoms*."

"Induration is an invariable precursor of an explosion of constitutional symptoms. When it exists, then to a certainty in a space of time that may be regularly predicted—namely, within six months—secondary symptoms will appear unless a judicious treatment be employed. Syphilis has been accused of being a vagrant: no such thing; it is on the contrary of all complaints in the nosological calendar, the most regular and most *methodical* in its development. Nothing under its empire is given up to chance. It knows no anarchy." (See chapter on Secondary Symptoms.)

The symptom of induration is of great value as a sign whereby the surgeon may know when mercury should be given: it likewise tells for how long a period it should be given; it is our hydrargyrometer, as Ricord calls it, and a very valuable one it will be found, as I shall explain in dwelling on the treatment.

TREATMENT.—In speaking of the treatment of indurated chancre, I shall first discuss the local applications, and then the general treatment, though both one and the other must be employed.

Local Treatment.—It has been stated (page 305), that soft chancre should be destroyed at once, since if it be effectually extirpated within the first few days, no ill consequences will follow, as it is a mere local affection. But this is not so with indurated chancre, which is a symptom that the system is, or is about to be, infected, and which is in fact the first secondary symptom. The local destruction therefore of an indurated sore by caustic is of no use. When a chancre shows marks of induration I have long since ceased to attempt to destroy it, finding that such treatment only exaggerates the local mischief. On the contrary, I now employ soothing applications.

Induration, as has been shown, may be attended with simple ulceration;—or gangrene may come on in the centre of the ulceration;—or the surface may become excoriated—or lastly, induration may remain after all traces of ulceration have disappeared. Now, in each of these cases, the local treatment required may be somewhat different. If the surgeon have reason to believe that the induration attendant on a sore depends upon any irritating application the patient may have used, all such exciting causes must at once be left off, and water-dressing substituted. If under this simple treatment the induration disappears, it is tolerably certain that it must have been of the bastard kind described at page 344, and the patient may be assured that he stands in but slight dread of secondary symptoms. If, however, under a palliative treatment, the induration remains in *statu quo* or

* Ambrose Paré had already comprehended the pathological signification of induration when he wrote, "If there be ulcer on the penis, and if hardness remain in the situation, SUCH APPEARANCE INFALLIBLY PROVES THE DISEASE TO BE SYPHILIS."

increases, the case comes under one of the heads we are about to describe.

Should the surgeon not be consulted until molecular gangrene has commenced in the indurated chancre, as delineated in Plate VI. Fig. 4, and described at page 345, water-dressing would alone prove inefficacious, and we must have recourse to opium, or the ulceration and induration will increase very rapidly. I formerly recommended an ointment composed of calomel and opium, but I have frequently found this application too irritating. I usually now desire the patient to use a lotion containing two drachms of the watery extract of opium, carefully rubbed down in a pint of water, or I order a quantity of crude opium, the proportions varying from one drachm to half an ounce, to be boiled for half an hour in a pint of water, strained through tow, and the lotion kept constantly to the sore. I am obliged to have recourse to this solution, as I find the spirit or acetic acid contained in the sedative preparations of the Pharmacopœia, even when largely diluted with water, cause great pain to irritable sores. It must however be remembered that these aqueous solutions do not keep well; they should therefore be made in small quantities at a time in warm weather.

The practitioner must not expect the local application of opium to have any other effect than that of allaying pain, and in favourable cases of preventing the ulceration from extending. It must be borne in mind, that the ulceration does not depend upon acute inflammation, as in phagedena, but upon effusion of lymph into the cellular tissue around the sore, thus strangulating the tissues, and causing their death. This effusion must, as we shall presently see, be removed by general treatment.

When called upon to treat simple excoriation on the surface of induration, water-dressing may be resorted to; or if there be any tendency in the surface of the excoriation to become converted into condylomatous growth, the very best application is sprinkling the parts with calomel, and placing dry lint between the glans and prepuce. I generally object to the employment of ointments, although many surgeons recommend them. I have found greasy applications become quickly rancid, from the heat and secretions of the parts, and thus produce much mischief. The idea formerly prevalent, that mercury would thus enter the system, has nearly exploded, inasmuch as most surgeons now believe that in all these cases, sores present a secreting and not an absorbing surface; and our object is the opposite of encouraging secretion, as we no longer imagine nature capable of throwing off the peccant humours, although some still treat syphilis as if this were possible.

When (by means of one or other of these plans) the ulceration, gangrene, or excoriation, or other complications have been removed, we have to consider how best to attack the induration itself.

Authors* have recommended the local destruction of these masses

* "Quand une cicatrice a déjà reconvert la tuméfaction, nous faisons entamer cette dernière par la potasse; et à la chute de l'escarre, la plaie est touchée plusieurs fois avec la caustique mercurielle. Il faut être circonspect dans l'emploi de tout

of induration ; the quotation given below will, however, show the danger of applying caustic, and Wallace* corroborates this opinion. I can, from personal experience, speak of the objection to removing masses of induration, in imitation of Delpéch,† by the knife. During the time I was making my investigations on the microscopical appearance of induration, I removed several masses of induration from different persons, and in one instance the surface of the incised wound took on the same indurated appearance, although the original indurated mass had been entirely removed by the knife : I may mention that no mercury had been given to this patient. The case is so far interesting, as pointing out that the germ of the disease extends further than the mere mass of induration, and that something more is required than mere excision, and of this I now purpose to treat.

The best way of locally removing the nodules of induration is by pressure. I usually now order strips of ammoniacum and mercurial plaster to be spread on soft wash leather, and if the situation of the chancre permits its application, apply slips of about three-quarters of an inch wide round the penis, so as to excite an equable pressure on the induration. Under this treatment the induration gradually diminishes, and ultimately disappears. Soap plaster or common adhesive plaster spread on moleskin will answer, but not so well as the mercurial plaster. The patient must be protected by internal treatment against painful erections, and the slips of plaster will require to be renewed from time to time. I have found this treatment very efficacious in private practice.

In other situations the masses of induration may be stimulated by touching them with tincture of iodine, or other excitants ; but equable pressure should always be employed if practicable.

General Treatment.—General treatment will always be required to remove specific induration effectually. With the exception of cases such as those of the spurious hardened sores mentioned at page 344, local treatment alone will fail. In spite of local applications induration will increase, or remain in *statu quo* for some weeks, as certainly as when the case has been entirely neglected ; secondary symptoms will then supervene, and relapses will occur again and again, the indurated mass remaining as hard as when it commenced many months before ; or every now and then, its surface will take on an excoriated or gangrenous appearance, if not controlled by general treatment.

The general treatment of induration consists almost exclusively in the administration of mercury, and we shall, therefore, at once proceed to the consideration of this subject.

autre caustique en pareil cas : ces tuméfactions jouissent de la funeste propriété de passer aisément à l'état cancéreux."—("Delpéch, Mal. Vénériens," p. 305.)

* "But with this recommendation I can by no means coincide ; for the application of caustics to these indurations will often cause troublesome and peculiar ulcers and serious consequent disease."—("Wallace on Venereal," p. 312.)

† "Si une sensibilité extrême se faisait remarquer après chaque cautérisation, il faudrait y renoncer et pratiquer l'excision de la tumeur avec l'instrument tranchant."—("Delpéch," *loc. cit.*, p. 396.)

MERCURY.

REASONS FOR GIVING IT.—CAN IT BE DISPENSED WITH?—Much has been written of late years on the abuses of mercury, and every practitioner, whatever his opinion may be on the subject, hesitates before subjecting a patient to a course of mercury; but I presume there are few in the present day who dare to treat indurated chancre with local treatment only. To such, the following abridged case from my note-book may act as a warning.

A surgeon who had lived in India, and taken a great dislike to the employment of mercury, contracted indurated chancre in December, 1847. Towards the latter part of January, 1848, he consulted me, and I explained to him my ideas on induration; my patient objected to mercury, stating that his occupation prevented his employing the remedy; his health, he thought, would not admit of it, and he moreover objected on principle to a remedy which he had always dreaded. Finding him thus indisposed to follow my advice, I could only remain a passive spectator, and note the consequences, particularly as at that moment I had several cases under my care of indurated chancres that were taking mercury, and I could draw comparisons.

Black-wash was employed, and the patient determined to do nothing else besides attending to his diet and avoiding late hours. In the commencement of March, blotches of a bluish livid hue appeared on the abdomen and thighs, the throat became affected, but still the patient objected to employ any mercury; the open sore still presented much the same characters of induration.

I then lost sight of him until November, when he returned to see me, stating that he had been in the north, and had placed himself under the care of Mr. Syme, in consequence of an attack of syphilitic iritis; that surgeon prescribed mercury, and he slowly recovered.

Now, notwithstanding all the objection which may be made to treat indurated chancre with mercury, the result of such a case as this will not encourage any one to follow simple treatment. A non-medical patient is not likely to choose to have an open sore continuing many months on his penis.

Certain northern surgeons teach their pupils that mercury is not necessary for the cure of syphilis in any form. While the patient is in hospital, and confined to a warm ward and comfortable bed, no very serious ill consequences may happen. But in private practice the after consequences of neglecting the use of mercury will convince most medical men, as they have myself, that whatever hospital surgeons, with European reputations, may do or omit, a private practitioner cannot allow syphilis to go on unchecked unless at the sacrifice of his reputation.

It is my deliberate opinion, that mercury is absolutely necessary for the general treatment of indurated chancre, nor do I stand alone in this. Whatever difference of opinion may exist on the mercurial or non-mercurial treatment of simple or phagedenic chancre, authors, almost without an exception, agree on the necessity of mercury in the treatment of indurated chancre, either for the dispersion of the local affection, or for the prevention of secondary symptoms. There

may be slight differences as to the doses and forms, but on the propriety of giving mercury great unanimity exists.

PERIOD FOR COMMENCING.—Although I believe that mercury will be absolutely requisite in specific induration, I would not recommend its employment for the first few days after the appearance of hardening. It is always best to pause before commencing a course of mercury, and see if nature will not cause absorption of the mass, in the hope that it may not be of a specific kind. Delay is dangerous in many things, but here it is only a wise precaution: it may enable us to avoid mercury altogether; and supposing the induration to increase, we can always have recourse to it after all.

Ricord speaks very strongly on this point. "I cannot insist too strongly on this. Do not prescribe a mercurial treatment except in cases where the constitutional infection is absolutely demonstrated. If the least doubt remains in your mind on the character of the chancre, if your diagnosis is not entirely made out, I advise you to defer all specific treatment, and to *know how to wait*."

There are authors who maintain that we should give mercury in the earliest stages of chancre, so that the antidote and the poison may enter the system together. This doctrine might be tenable, provided we held that all chancres require mercury, but as, nine times in ten, primary symptoms do not require mercury, and as, during the first few days, it is impossible to say what sores will become indurated, and therefore be followed by secondary symptoms, we should, if we were to give mercury, do so unnecessarily in nine cases out of ten. The advocates of these opinions have not shown that their treatment is more successful than any other. I have not found it more difficult to treat an indurated chancre that has existed a fortnight than one which has become hard only a few days before, and I have observed no severer secondary symptoms follow the one than the other. However, in advocating caution, I would not be supposed to recommend the surgeon to put off the use of mercury for an indefinite period: if the hardness does not abate, or if it increases without any assignable cause, or if gangrene is set up in the centre of the indurated mass, I would at once commence mercury; for delay can now be of no use.

OBJECTIONS TO GIVING MERCURY ANSWERED.—In consultation, I have heard the following objections to my views; "You admit the quantity of mercury must be large, and that it must be administered for a long time to dissipate induration, and even then you dread the occurrence of secondary symptoms; why give mercury at present? why not wait till the occurrence of secondary symptoms? you may *thus* avoid two courses of mercury."

This objection is valid in many instances among poor patients, but does not, I think, apply to cases among the upper classes. A dispensary or hospital out-patient too often considers himself well as soon as the sore is healed; he absents himself, or, it may be, discontinues mercury too soon. This frequently happens in consequence of the fear of losing his work by attending at a public institution, and perhaps not one in ten goes through a proper course of mercury. Now, as this so often happens, it does become a question, whether it be good or bad treatment to give such a man mercury for an indurated sore, seeing

that probably he cannot or will not attend the requisite time. Scientifically, the treatment may be right, but the surgeon may be unable to carry it into practice. But among the upper classes I have no hesitation in recommending the surgeon to treat indurated chancre with mercury at once, and not think of waiting until secondary symptoms appear.

Clinical observation teaches us that mercury *must* be given in these cases. Scientifically the treatment is right. The chief force of the objection lies in the allegation that mercury will not always prevent secondary symptoms, and that it is, therefore, better to wait for the secondary symptoms before giving it at all. Now this is not the fact. Mercury when properly and duly administered does prevent secondary symptoms in the majority of cases. It is better to risk the reproach that mercury has been administered without preventing relapses (which comparatively seldom happens), than to let secondary symptoms occur for want of mercury (as they certainly will).*

COUNTER-INDICATIONS TO A COURSE OF MERCURY.—In cases of genuine indurated chancre when the surgeon thinks it necessary for its cure to administer mercury, I do not know of any counter-indication to its use. The question certainly often arises in a way that makes it rather difficult to decide. Can it be safe to give mercury to a scrofulous or cachectic patient? Ought not a phthisical or a strumous diathesis, or general great debility, to counter-indicate mercury? The answer is, that the indurated chancre is the pressing disease yielding to no other in the importance of its effects on human life and health. Clinical experience has taught me that no patient labouring under the syphilitic diathesis can recover his health till the specific disease which is poisoning every vital solid and fluid be eradicated, and the recorded facts are against this fear of mercury. Instead of its injuring such patients, a carefully directed course will often cause a marked rally of the vital powers, and the fact is that there is no alternative. Greater mischief will ensue, even in a cachectic patient who labours under constitutional syphilis, from the want than from the use of mercury. Every possible precaution should, of course, be taken to prevent any ill-effects.

PREPARATIONS OF MERCURY TO BE PREFERRED.—When the diagnosis has been satisfactorily made out, and the remedy decided upon, the next point to be considered is, the *form of mercury* the surgeon should employ. In one of his lectures,† M. Ricord considers that the pure mineral is more soluble than all the preparations of mercury; and he says that the lactic acid of the stomach, coming in contact with the metal, forms a bilactate of mercury, a preparation easily soluble.

M. de Baerensprung believes that the protoxide of mercury is the only preparation that is soluble, either when taken into the stomach, or when employed in friction; “but,” says this author, “even the oxide cannot be taken into the body without the aid of a solvent; and this solvent is, in all probability, the free acid of the cutaneous secretion. Both the perspiration and the fatty secretion of the sebaceous follicles exhibit an acid reaction; and according to Anselmino, the perspira-

* In Paris and Brussels, as well as London, it is now the settled practice among almost all medical men, to prescribe mercury in indurated chancre.

† *Gazette des Hôpitaux*, August 30th, 1845.

tion contains a considerable amount of free acetic acid. The acetic acid dissolves the oxide, and this solution readily transudes through animal membranes and the cells of the epidermis." Hence he recommends that mercurial ointment be made with two grains of the black oxide of mercury to two drachms of fatty matter. (See an interesting paper on the action of mercury in the *Chemical Gazette*, 1850, p. 324.)

INTERNAL USE OF.—Although I less and less frequently employ mercury internally, yet, since there are many who still do so, it will be necessary to speak of the different preparations now generally in use.

The simple and milder the remedy the more serviceable I have found it. For these reasons I used to prefer

Hyd. c. Creta given alone or in combination with Dover's Powder. The recent investigations of Professor Redwood have, however, shown that much of the present grey powder found in commerce is not what it professes to be—viz., finely divided metallic mercury with chalk, and a portion of the protoxide of mercury (one of the least irritating of the mercurial preparations, and, therefore, when swallowed producing little disorder of the alimentary canal), but sometimes contains bin-oxide of mercury, which is a powerful irritant, and when taken internally, even in small doses, readily excites vomiting and purging.

Mr. Redwood mentions that five grains of one specimen of grey powder he examined, would yield nearly one grain of corrosive sublimate by the action of the hydrochloric acid in the gastric juice of the stomach upon the bin-oxide of mercury. This admixture arises, the professor thinks, from the long trituration which the mercury undergoes, and from exposure to air and light in the modern way of preparing it by machinery. (*Pharmaceutical Journal*, April, 1860, page 504.)*

Pil. Hydrargyri is a preparation that answers well, and from recent analyses it would appear as if the genuine article can be generally obtained. Professor Redwood says:—

"I thought it desirable to ascertain the state of the mercury in 'blue pill,' which is admitted to be an efficacious medicine. In several specimens which have been examined, the mercury was found to be almost wholly in the metallic state, a mere trace only existing as oxide, and these specimens had been prepared by machinery. It would appear, therefore, that finely divided metallic mercury is capable of producing the required effect, and also that the presence of the saccharine matter in 'blue pill' prevents the mercury from becoming oxidized as it does in 'grey powder.' It was probably with the view of effecting this object that manna was directed to be used in making *hydrargyrum cum creta* and *hydrargyrum cum magnesia* in the Dublin Pharmacopœia of 1826. The addition of sugar of milk would perhaps be found to answer the purpose better than manna in some respects."

Mercury given in the form of blue pill is not liable to produce colic, has no excessive tendency to purge, does not very rapidly induce

* Since the above investigation, the lengthened trituration effected by machinery has been in a great measure discontinued; and the *Hydrargyrum cum Creta* is now generally found to be free from the bin-oxide.

ptyalism, and being of sufficient bulk, a little more or a little less taken at a time is of no great importance, as it is when we employ a preparation to be divided into a sixteenth or a twelfth of a grain.*

Prot-iodide of Mercury.—M. Ricord still maintains that there is no preparation like the prot-iodide of mercury. In Paris it certainly succeeds very well, but it almost invariably fails in the cold uncertain climate of England. I have tried it myself over and over again, obtaining the preparation from Paris, and yet its administration has been followed by diarrhoea. I have, moreover, known a patient take the remedy with impunity and advantage in Paris, and yet as soon as he began to reside in London, pills that he bore well in Paris, although taken from the same box, invariably produced colic to such an extent that he was obliged to relinquish their use.

These and similar cases have obliged me to omit this preparation from the list of remedies I usually employ. The other preparations of mercury are not usually given in indurated chancre, and need not be further alluded to in this place.

PRECAUTIONS PREVIOUS TO OR DURING A COURSE OF MERCURY.—The only precautions to be taken previous to a course of mercury, consist in removing diarrhoea or costiveness. I do not find it necessary to alter the diet, unless it be to prohibit acids, fruits, or anything liable to disagree with the bowels. The patient is not required to keep the house: mercury undoubtedly acts better when the patient is confined in an equal temperature, but private patients will not bear confinement, nor generally absent themselves from business.† In

* There is great difference of opinion among surgeons upon the relative value of mercurial preparations. Brodie recommends frictions with mercurial ointments. His language, at page 676 of the *Lancet*, vol. i., 1843-4, is very energetic. "Nay, I will go so far as to say, that except in the very slightest cases, you really cannot depend upon any mercurial treatment effecting a certain cure, or even giving a good chance of it, by any other means than inunction."

Lawrence prefers blue pill; Carmichael did the same. The differences of opinion show, I think, that the preparation employed is not so important as regulating the dose, and attending to the indications.

† Surgeons are far from unanimous on the necessity for keeping the house during a course of mercury. Brodie states, page 676, *loc. cit.*, "I should say, that if a patient be confined to the house, or only allowed to go out a little once or twice a day, and if he be made to rub in mercury, and continues it for some time after the symptoms have subsided, the case being carefully watched, you will, in most instances, make a real and permanent cure."

Carmichael recommends confinement in the following words, page 157 of his "Clinical Lectures:"—"Another point to which I beg to call your attention is, the necessity of confining your patient to the house during a mercurial course (except the weather happens to be particularly mild), and so strongly am I convinced of the propriety of this advice, that where this injunction cannot be complied with, I deem it better, even though the use of mercury be strongly indicated, to dispense with it altogether, and have recourse to other measures, than to exhibit it whilst the patient is exposed to our cold and variable climate."

Lawrence thus gives his opinion, at page 728 of the *Lancet*, vol. i., 1829-30:—"In the first place, we find that the effect of mercury is increased by warmth, and by keeping the individual in a regulated temperature. Hence it used to be considered a rule that the patient should remain in a warm room, that he should not go out and expose himself to the air while he was going through a course of mercury. There is thus far a reason for this, that free exposure to the cold air lessens the effect of the mercury. If you wish, then, to produce the effect of mercury readily, and to its highest extent, you should keep the patient in a regulated temperature, and with

spite of all our precautions, diarrhoea sometimes sets in, and the mineral will not be tolerated. This arises from the difficulty some patients have in regulating their food, or avoiding such articles as are incompatible with mercury taken internally. In practice we can often trace this disorder of the bowels to such slight causes as a waxy potato, or a glass of porter, which in warm weather is a little hard, and arising from a trifling cause like this, we find astringents or opium in many cases inefficacious, and the complaint only ceases when we leave off giving the mineral internally.

I should have remarked that as soon as mercury begins to run off by the bowels, it ceases to have any beneficial effect on the constitution. The following case is a good illustration of this, and the necessity of using some other means of administering mercury. In August, 1856, a patient came to me with two large indurated masses on the penis, telling me that he had been under the care of an eminent hospital surgeon two months, and taken all the different preparations of mercury, but one and all disagreed with him, producing diarrhoea. I at once relinquished the attempt to administer mercury internally, and employed mercurial frictions on the thighs. The patient quite recovered.

THE DOSE OF MERCURY.—When grey powder is given the dose should be four or five grains. Blue pill may be prescribed in the same dose at first only at night, but in the course of a few days it may be given night and morning, and if the patient bear it at the end of ten days or a fortnight, it may be ordered three times a day. It is better not to give more than five grains of these remedies at a time. The remedy had better be given between meals, as the stomach is then empty, and the remedy more easily absorbed. Ricord says, "There is no fixed dose which will influence all constitutions alike. If the patient gets better under a particular dose, let it be continued; if his improvement slackens, the dose should be augmented. But recollect that even here mercury is not given as a curative agent only; it is necessary to consider it as a preventive one, since an indurated chancre is a true indication of the constitution of the patient being infected. As soon as the mouth is affected the remedy must be diminished, and the chlorate of potash (see page 362) administered. This is the sign which is to guide us in increasing, continuing, diminishing, or leaving off our administration of mercury. All we want to set up is a very *slight buccal irritation*, not amounting to salivation; the less the better, and as soon as this is produced, the dose of the medicine must be diminished.

EXTERNAL USE OF—Frictions—Rubbing in Mercury.—In private practice I generally, as I have stated above, abstain altogether from prescribing mercury internally, more especially if my patient tells me his bowels are easily disturbed; for if this happens when no medicine is taken, you may infer that he cannot take the requisite

warm clothing. We do not desire strictly to confine the patient to his chamber during the entire course, that is not necessary; but it is a matter of expediency not to allow him to go out; keep him warmly clothed, and, under certain circumstances, confined to his own room, but this confinement is not to be considered as an invariable rule."

quantity without diarrhoea supervening, even if he avoid indigestible food, or substances containing acids. This is more especially found necessary in London among our patients, so many of whom labour under the hundred-and-one forms of indigestion. In all such cases I at once have recourse to frictions; and a pretty large experience has convinced me that no plan is equally safe, simple, or efficacious, when a patient will submit to inunction. The only objection that can be urged against it in the present day is its uncleanness, and this may be almost entirely obviated by the precautions in using it which I am about to particularize.

In the first place, care should be taken that the mercurial ointment be not rancid, otherwise eczema will be a necessary consequence: I prefer using the strong mercurial ointment of the *Pharmacopœia* in its pure state. This must be procured from some undoubted source, as I believe it is not unfrequently adulterated with the most inert substances. Considerable difference of opinion exists on the state of the mineral in this preparation. I must refer those curious on the subject to several articles in the *Pharmaceutical Journal*, by the late Jacob Bell, who has collected all the various opinions on this subject in several interesting communications; but the practical surgeon will be satisfied in obtaining the unadulterated article, and be more anxious to learn the indications for its use, and the precautions to be employed, than curious to hear if the theorist considers the mercury to be in a state of suspension or oxydation. The most experienced surgeons of the present day admit that mercury becomes more efficacious in proportion as it is presented in the simplest state to be absorbed into the system; but no two are agreed upon its *modus operandi* in removing the disease.

The plan I pursue in employing frictions is the following:—I desire the patient to smear a quantity of ointment, equal to the size of a horse-bean, on the inside of each calf of the leg, or knee, every night, on going to bed; not rubbing it in, as some have recommended, but merely passing the hand from above downwards; by this means avoiding rubbing the hair in the wrong direction, and thereby producing irritation of the bulbs and subsequent tenderness. Absorption will take place quite readily enough without rubbing both ways. To prevent the sheets becoming black, it will be necessary to wear drawers night and day until a cure is effected. Every third or fourth evening the patient should take a warm bath, using plenty of strong common soap in order effectually to remove the stale ointment that adheres to the surface of the skin. Absorption of fresh ointment will thus be expedited, and the occurrence of eruptions prevented. I recommend the application of the ointment on the inside of the leg and knee, as being preferable to the inside of the thigh, for several reasons: in this latter situation some of it is certain to be applied by the friction of the trousers to the fold between the thigh and scrotum; the heat and friction, together with the natural secretion of these parts, will soon cause the ointment to become rancid, and eczema of a most severe form may occur, which only declines as we leave off the application. It is moreover difficult when frictions are employed in these situations to keep the shirt from becoming smeared with the

ointment, so as to attract notice, which, in private practice, it is most desirable to prevent. If, on the contrary, the ointment be applied to the calves, neither the linen nor the bedclothes will be the least soiled, and it often happens that patients rub in without any of their family being aware of their using this usually dirty remedy.* As an extra precaution I often recommend the patient to let his shirt remain outside the drawers.

In indurated sores, when frictions must be employed for some time, the ointment may be rubbed in on the outside and the inside of the

* Pearson, who, we are told by Sir B. Brodie, was more successful in the treatment of syphilis than those who have succeeded him, states, "Half a drachm of strong mercurial ointment may be used every night, or one drachm every other night, as the case may be. If a sufficient effect is not thus obtained in sixteen days, one drachm may be employed every night, and gradually increased to a drachm and a half or two drachms, or even more, if the proper effect be not obtained. No advantage can be expected from the use of more than half an ounce at a time.

"While under a mercurial course the patient should wear more clothing, and avoid exposure to cold or moisture. The former, with heat, will increase the determination to the mouth, and the latter will weaken the effects of mercury, and render them uncertain, and often check them when produced. When a person undergoes a mercurial course for secondary symptoms he should be confined to his room, if not to his bed, and, though not absolutely necessary, it is advisable even in summer. The room should not be small, or too much heated, and the patient should not lie much on a sofa or in bed, or sit near the fire, as the cheeks will thus be more or less affected. A little animal food may be allowed, with a small quantity of porter or wine. All acids must be abstained from, and even tea, if it becomes acid on the stomach. No vegetables, except potatoes, should be eaten. The bowels should be kept regular by castor-oil, or ext. col. comp., so that the patient may have a stool every day, or every other day at farthest. Let us consider,

"1st. *The quantity necessary.*—For primary symptoms it will be necessary, when these have not existed long, to use not less than two drachms of calomel internally, or three drachms of mercury in the simple pill, or from an ounce and a half to two ounces of mercury internally, not including the substances with which it is combined. When secondary symptoms are present, from two to three ounces of mercury externally should be used, *and when the disease has attacked the bones* ounces, seldom less than four ounces.†

five or
we

are not to be guided by the quantity of mercury, or the time taken up in employing it, but rather to the effects produced. The mercury must be continued some time after the symptoms have disappeared. In some cases it has been necessary to continue it seven or eight weeks; in secondary symptoms, seven to nine weeks will be necessary; *and in the last stage, when the membranes and bones are affected, from nine to twelve.* In such cases the mercury should be gradually introduced, that its effects may rise progressively in the constitution—never allow it to fall. When the patient spits a little, and his gums are slightly ulcerated, the quantity should be gradually increased, that the mercury may gain dominion over the constitution. If after this effect you suffer the mouth to become well, *the cure will be uncertain.* On the other hand, if the remedy be not gradually introduced at first, the patient will be soon obliged to stop, and will probably experience great inconvenience during the whole course. Salivation is of no use, except as a test of the effect of mercury, and therefore becomes desirable; and spitting, to the extent of half a pint to a pint daily, with slight tenderness of the gums, will be sufficient."

When diarrhoea or dysentery comes on during a course of mercury, Pearson recommended leaving off the mineral, giving a purgative, followed by opiates.—("Manuscript Notes of Pearson's Lectures," in the possession of Dr. Tweedie.)

† I need not remind my readers that this was John Pearson's treatment. Iodide of potassium was not then known.—W. A.

thighs or legs alternately, or on the arms. The absorbents after a time become incapacitated from taking up any more mercury, and the frictions cease to exert any influence on the disease, unless the spot where the inunction is applied is altered so as to bring another set of lymphatics into play.

Fumigation.—Another plan of administering mercury is by fumigation. This mode was much in vogue some years ago, but fell somewhat into disuse. It has recently been used with an improved apparatus both in cases of primary and secondary symptoms. This subject will be considered under the treatment of Secondary Symptoms.

EFFECTS OF MERCURY ON THE SYSTEM.—Generally a fortnight elapses before the surgeon can perceive any perceptible taint of the breath, or soreness of the gums,—I say the surgeon, for long before this, a patient may complain of all the symptoms he has been told attend salivation; he feels convinced that he experiences the coppery taste. From moving about his tongue, and sucking his gums, he makes them bleed, and the surgeon even may be misled by the foetid breath, if he has not previously examined the mouth, to detect decayed teeth or spongy gums, depending upon a collection of tartar. In one case the smell of onions eaten during the previous day gave the breath a peculiar taint which was mistaken for mercury.

I have seen mercury left off much too soon, because slight salivation is supposed to have been produced, and as only slight salivation is recommended by modern surgeons, the object is supposed to have been attained, when in truth no specific effect has been produced. The real effects of mercury are the following:—During the first few days, a patient does not feel that he is taking medicine, unless the weather be bad, when he may complain of lowness of spirits. We not unfrequently find the flow of urine considerably increased, and perspiration abundant, the bowels often confined. The gums and cheeks first show the influence of the mineral by whitish patches; the gums, in contact with the teeth, become red and swollen; a patient complains of feeling his teeth, and the interstices between them, and they bleed when he uses his tooth-brush. There is now slight foetor of the breath, and a somewhat increased flow of saliva, and the weight of the body diminishes from the loss of flesh which rapidly goes on. The mineral should be generally continued until one or more of these effects are produced.* I say generally, for every now and then we find cases in which, do what we will, the

* Nearly all authors are unanimous upon the effect we must produce on the gums, however much they may differ upon other points. Brodie says, "With reference to the effect of mercury on the system generally, I believe it is always better that the gums should be made a little sore, and that there should be some degree of salivation. You cannot depend upon it when employed in syphilis unless these effects are produced."—("Clinical Lectures" in the *Lancet*, vol. i., 1843-4, p. 677.)

Lawrence states it as his opinion, "That the effect which is thus produced upon the mouth is considered a criterion of the general influence upon the system of the remedy on which we place our reliance for arresting and curing syphilis, and I believe it may be safely regarded in that light. So long as no alteration is produced on the state of the mouth, we often find no curative effect take place, and we generally find the curative influence proceed in proportion to the local effect observed in the mouth: we cannot, however, say that this is true in all cases."—("Lawrence's Lectures" in the *Lancet*, vol. i., 1829-30, p. 728.)

gums will not be affected, and yet the disease will rapidly get well, which is, after all, our only object in giving mercury. I believe, in the present day, practitioners commit a great fault in suspending the use of mercury too quickly. So much has been written on the dangers of salivation, that we do not now even obtain the full beneficial effect of the mineral. We stop short, and hence the number of relapses.

SALIVATION.—Formerly it used to be thought indispensable in administering mercury, to continue it till salivation was produced, as stated in the previous page. In many cases, I find that, although the gums cannot be affected, the patient, nevertheless, rapidly gets well without any relapse. This desirable result does not often follow, and therefore salivation and some of its phenomena and consequences must be considered.

Salivation is a rare occurrence previous to teething, as mercury up to this period acts rather on the digestive organs, or on the skin. It occurs readily in females, in persons of lymphatic temperaments, in scrofulous habits, and especially in persons predisposed to scurvy; in fact, we observe it in all those who appear to possess blood deficient in plasticity. Habitual constipation and decayed teeth especially predispose to it. Soluble preparations of mercury excite salivation more easily than those which are insoluble.

Salivation may occur during the first week of the administration of the mineral, and may follow twenty-four hours after the first dose, more commonly after the fifth day. It is liable to occur after every augmentation of the dose; but when salivation does not occur at the commencement of the treatment, it has little tendency to arise at a later period.

The augmentation in the quantity of saliva is the first symptom which strikes the observer; the mucous membrane becomes partially or generally swollen, and is affected with inflammation, partaking of the œdematous and erysipelatous characters. The patient feels heat in the gums, there is a coppery taste in the mouth; there is redness of the gums, the teeth are raised in the gums, moveable, and seem to the patient to be separated by some foreign body; he believes that they are longer than usual; the tongue swells, and this sometimes occurs to so great an extent that it is incapable of being contained in the mouth, and may receive indentations from the teeth. The gums and lips likewise swell, and the mucous membrane may become tumefied in the interval between the lower and upper jaw. In proportion as these symptoms are aggravated, so is the saliva found to be viscous and abundant, and to have what is called a mercurial smell,* a sort of metallic odour, that may be perceived to some extent in other inflammations of the mouth, but which in these cases is very marked, and which may be found previous to the occurrence of ptyalism.

The above is a description of what *may* sometimes occur in salivation, but in the present day such cases are and ought to be of very rare occurrence. A student may pass through the wards of the

* * In the twelfth number of the *Expérience* for 1837, will be found some curious investigations of M. Gmelin, which prove that mercury is present in the saliva. Ricord states, he has repeated these experiments without success.

Venereal Hospital at Paris, containing four hundred beds, without seeing a single case of the affection, although half the patients or more may be taking mercury. The cases that most imperiously demand mercury are generally most tolerant of it. Salivation will most frequently occur when there is no occasion for mercury at all. Ricord lays it down as an axiom, "*The curative action of mercury is generally suspended from the moment the morbid symptoms which properly belong to this mineral begin to show themselves.*"

The *Treatment of Salivation* ought, in the first place, to be prophylactic. Our primary object should be to abandon the cause which has given rise to it, if that be in our power. As preventive means, we should mention keeping the mouth clean, the use of astringent gargles, and the employment of aperient medicines.

Still we need not regard salivation with much alarm, for we have it under complete control.

Chlorate of Potash is truly a specific in this complication. It should be given in large doses twice or three times a day, and as it is not readily soluble it is well to give it in powders, as thus :

R. Potass. Chloratis . . . ʒss.

M. ft. Pulv. et div. in pulv. viij.

Cap. j. ter die ex cyatho amplo aquæ.

In a short time all the symptoms affecting the buccal mucous membrane will subside. There will still be some determination of saliva to the mouth when the chlorate of potash is first given, but this will soon cease. This medicine is such a simple remedy (although producing a specific effect), that it may be continued as long as the mouth feels any ill-effects from the mercury. I think it as well to employ at the same time a gargle of chlorate of potash to be used frequently to wash out the mouth. Some French surgeons think that the chlorate of potash may be employed in this way alone, and need not be given internally, so thoroughly efficacious is it. In making a gargle its insolubility must be borne in mind; an ounce of water will barely take up a scruple of the salt.

It is usual to leave off mercury while the salivation lasts, but this is not absolutely necessary, if the induration be very severe. If discontinued, the mercury should be resumed as soon as the salivation abates; and continued just as if none had existed; for if salivation is once overcome it will not probably occur again. If it do recur, similar treatment must be had recourse to, and in cases where there is a great disposition to salivation, chlorate of potash may be given as a prophylactic.

Since we have acquired more precise knowledge on the value of chlorate of potash, other remedies have been in the main abandoned. Sulphur, however, given in milk or honey in half-drachm doses, has been supposed to be an excellent remedy against salivation. Sir W. Burnett, on the other hand, says, in his account of the effect of mercurial vapour on the crew of the *Triumph*, "I shall therefore only briefly state, that sulphur given in large quantities internally produced no alleviation of the symptoms; on the contrary, it greatly, augmented the bowel complaints with which many of the men were affected, and brought on most severe tenesmus, consequently it was

laid aside; applied externally it was of no use."—(*Johnston's Review*, vol. iv. p. 1014.)

As a local remedy, and one that never fails in the severest forms, the surgeon should employ strong muriatic acid. Let the affected parts be touched daily with the acid, by means of a little piece of lint wrapped around a probe, care being taken that the acid does not come in contact with the teeth. When no ulceration is present, little pain will be felt, but when sores exist, the pain will be severe but momentary, and the ulcerated surfaces will bleed on each application; the mouth should always be washed out after the use of this remedy, and the benefit which follows will become in a short time apparent; the patients instead of dreading, will ask for a repetition of the treatment. When ulcerations do not exist, an astringent gargle may be prescribed; in other cases, one that is only slightly acid. Lemonade is the most agreeable drink. Circumstances may arise in which aperients, leeches to the base of the jaw, and bleeding from the arm, may be requisite. The food should be in proportion to the patient's strength.

It is quite an error not to allow patients suffering from salivation to clean their teeth. In the severer cases lint, a quill, a piece of stick, or the finger wrapped round with lint, may replace the brush, but only until the acute symptoms have passed away. Friction, indeed, answers better than anything else in bringing the gums back to their original condition.

INSUSCEPTIBILITY TO MERCURY.—There are a few patients who appear to resist the effects of mercury, just as there are some who are influenced by a few grains; the former may generally be salivated, when confined to a warm room, and not allowed to expose themselves to the air. Women, for these reasons, require less mercury than men, and infants at the breast are placed in the most favourable circumstances for the beneficial influence of the mineral. If a patient will not confine himself to the house, at least he should clothe himself in flannel, avoid wet or cold feet, exposure to draughts, &c.

The effect of mercury on the system varies greatly. Some patients are not aware of any effect whatever; others, from the first dose, begin to feel lassitude and a general uneasiness; their appetite fails them; the tongue is moist and white, though not furred; there is some fever and heat of skin; this goes off in a few days, and the patient bears the remedy well during the remainder of the time. I generally recommend a glass or two of wine to patients who feel this uneasiness, or weak brandy and water; brandy and soda-water will sometimes put the stomach to rights better than anything else. If, on the contrary, the patient habitually indulges in wine or spirits, his rations must not be cut off suddenly, but gradually diminished to a more moderate quantity. I have never found any advantage follow from keeping persons who are taking mercury on low diet.

On the contrary, I always recommend some tonic to be given when it is necessary to continue the use of mercury for any time. I feel sure that many of the ill-effects attributed to mercury have arisen from the non-observance of this important rule.

HOW LONG MUST MERCURY BE GIVEN.—When it has been once decided that the patient must submit to a course of mercury, it should

never be discontinued till all traces of disease have subsided. It is often laid aside far too suddenly. The following case is an instance in point :—

In May, 1851, Captain R—— consulted me on the propriety of taking mercury for an eruption which his regimental surgeon considered syphilitic. On examination I found an indurated sore, and desired that frictions should be employed at the least for three months, as my patient was obliged to leave town. At the end of three weeks (the eruption being better) the regimental surgeon sanctioned the discontinuance of the frictions, even before the mouth was sore, and prescribed in turn sarsaparilla and iodide of potassium, the patient at the same time being sent to the sea side. In the middle of July my patient returned, suffering from secondary sore throat. This symptom was considered of such slight importance that Captain —— was about to travel for the benefit of his health. To this I could not consent. If the mercury had been employed for the period I recommended I feel sure that this return of the complaint would not have occurred.

As a general rule, the mineral should be given as long as any hardening remains around or beneath the sore, and this must vary from six weeks to three months or more. Sir B. Brodie says, “If it (mercury) be taken for a primary sore, the patient should never leave it off until the hard cicatrix has disappeared. You must exhibit it until the sore has healed, and for some time afterwards.”—(*The Lancet*, vol. i., 1843-44, p. 676.)

General rules, however, in this department of surgery admit of a large number of exceptions, as I have frequently had occasion to mention. When I commenced private practice, it was my determination to give very little mercury, and continue it for very short periods ; but I found the evil was as great in giving too little as too much of the mineral, and I now give mercury, not only in the same sort of cases which I formerly thought required it, but continue it for longer periods. I should, however, be sorry to carry it to the extent some recommend ; such treatment would be attended with the worst consequences ; and even given with the greatest precaution, and in the most urgent cases, I am often obliged to leave it off, when it ought, were it possible, to be continued for longer periods. I will here cite a case which has lately come under my notice, to show the practical difficulty surrounding this part of my subject. A gentleman contracted indurated chancre ; frictions were employed ; every precaution was taken by the patient and myself, but he did not and could not keep the house. The frictions failed in dispersing the induration, although continued for six weeks ; the powers of my patient began to fail ; the bowels became irritable ; the digestion got out of order ; the spirits low ; the pulse feeble ; and press of business prevented him leaving town. I was compelled to leave off mercury, and yet I felt convinced that secondary symptoms would arise. My patient at length left town, and his health recovered immediately ; but with it an abundant crop of secondary symptoms appeared on the scalp. Under the circumstances, mercury internally was given, which, at first, the patient bore well, the symptoms rapidly disappearing ; but diarrhoea

coming on, partly owing to the mercury, and partly to copaiba, the mercury was again left off; he came to town, and finding himself again suffering a relapse, consulted another surgeon, who told him that iodine was the proper remedy, and recommended that it should be tried again (for the patient had before taken it). The symptoms, however, in spite of iodine, increased, and he again consulted me, and moderate doses of mercury, which he bore well, as he had recruited his powers in the country, now cured him, although he had formerly taken it without any marked beneficial effects.

When induration occurs in a person who has already had secondary symptoms, but little mercury is requisite to cure the induration; even in cases where, had secondary symptoms never occurred before, larger quantities would probably have been required. The first instance which directed my attention to the subject was the following:—In the summer of 1845, a gentleman contracted chancre, which became indurated, raised, and the centre took on a gangrenous action. A simple plan of treatment was followed at first, but at length mercury was resorted to, when what was my surprise to see the symptoms totally and rapidly disappear. Having learnt that this patient had suffered some years before from secondary symptoms, I left off mercury a few days after the entire disappearance of the induration, and no relapse afterwards took place.

Now here the induration probably occurred in the old cicatrix, and was, in fact, a bastard form of induration. (See p. 344.)

To avoid unnecessarily giving mercury in this form of indurated chancre special inquiry should be made of the patient whether he have ever suffered from secondary symptoms. If he have, iodide of potassium is to be preferred to a course of mercury, the patient often recovering under its influence in a few weeks with much less distress. Still iodide of potassium will not always remove these secondary indurations, if I may so call them. It is, however, well to try what it will do before commencing mercury.

Sometimes, but rarely, although the patient has had secondary symptoms previously, not only will iodide of potassium fail, but a slight course of mercury will be found quite insufficient. The case mentioned at page 343, not only required mercury, but I found it necessary to persist in its use as long as if he had never had occasion to take it eight years before. I should, however, remark that he had then been salivated quickly, although he took the mineral only a short time. It seems from this case as if the syphilitic diathesis can sometimes again be acquired after an interval of nine years.

In carrying out the general rule, that mercury should be given as long as induration lasts, the surgeon must not forget, that in old-standing cases, the mass may consist of something more than specific induration, and may be made up of organized tissue, which it is in vain to think of removing by mercury, as is ably stated by M. Ricord and Wallace.* I have myself seen persons bearing traces of induration

* When this specific induration has been destroyed, there remains sometimes *du tissu inodulaire, des tissus de cicatrice, des nodules de tissu fibro-cartilagineux*, which may impose upon us as the remains of induration. Mistrust generally an

for two years after a course of mercury has been left off, and yet no secondary symptoms follow; but in these instances it has been impossible, from the situation of the hardened mass, to apply compression. I now generally find these "remains" less common than formerly: the surgeon, however, must be prepared to leave them occasionally, particularly when he thinks he has given mercury enough, or the constitution of his patient will not allow him to carry it further.

On this subject M. Ricord makes the following remarks in his "Lectures on Chancre:"—

"Clinical investigation alone can teach us practically how long we should continue to administer mercury. It may be necessary to employ mercurial treatment for the space of six months, in a daily dose sufficient to destroy the well-known physiological effects which result from the disease; and then for the next three months to give iodide of potassium as a protection from the more distant consequences of the diathesis. These are the means by which we most frequently succeed in effectually curing our patients. In thoroughly neutralizing the toxic virus—I might almost say in curing syphilis,—at least in the majority of cases, there is no certain dose or preparation of mercury, nor any settled *duration of mercurial treatment*, which will guarantee an immunity from the consequences of syphilis when once its poison has taken possession of the system. The surgeon cannot promise more than a *probable* immunity, or do more than give his patient the benefit of the greater number of chances."

Other consequences besides salivation follow the administration of mercury, which deserve the attention of the reader. Some of these will be fully discussed hereafter, but one or two may be introduced here.

ERYTHISMUS MERCURIALIS.—This was formerly a not uncommon disease. Pearson says, "It is one which is characterized by great depression of strength; a sense of anxiety about the præcordia; irregular action of the heart; frequent sighing; trembling, partial or universal; a small, quick, and sometimes intermittent pulse; occasional vomiting; a pale, contracted countenance, and a sense of coldness; but the tongue is seldom furred, nor are the vital or natural functions much disordered. When these symptoms, or the greater part of them are present, a sudden and violent exertion of the animal power will sometimes prove fatal; for instance, walking hastily across the ward, rising up suddenly in the bed to take food or drink, or slightly struggling with some of their fellow-patients, are among the circumstances which have commonly preceded the sudden death of those afflicted with the mercurial erythismus."*

I need not say that these results are no longer witnessed, but we

induration which resists, during six or eight months, a well-regulated mercurial treatment.—(Ricord, *Gazette des Hôpitaux*.)

"It is, however, to be observed, that it will not be always in our power to disperse indurations of this kind; for it sometimes happens that a state of hardness and tightening will continue long after the period at which mercury ought to be omitted. Indeed, a state of induration and contraction of the parts which have been the seat of primary syphilis may persist even for life."—(Wallace, *loc. cit.*, p. 312.)

* Pearson on Lues Venerea, p. 154, second edition.

still every now and then meet with effects of syphilis and mercury which deserve the attention of surgeons. M. Ricord has called this state of system

SYPHILITIC CHLOROSIS : he has lately found that in the syphilitic diathesis there is an invariable alteration of the blood, and this consists in diminution of the number of the red globules in various proportions, amounting, in some cases, to anæmia ; there is the same depression of the circulation, and the dull eye and dirty complexion show that the blood no longer possesses its healthy properties ; and we are told by Dr. McCarthy that we have the same morbid sound accompanying the first sound of the heart, as is heard in the carotids in anæmia.*

If, then, these symptoms result from the syphilitic diathesis, we can hardly be surprised at Pearson having met with them in an aggravated form, since he gave mercury so largely (see p. 359)—a mineral which we know, from the experiments of Magendie, has the power of depriving the blood of a large portion of its fibrin. These are consequences which should be always borne in mind. Pearson recommended all mercurial preparations to be left off, whatever might be the stage or extent or violence of the venereal symptoms ; “The impending destruction of the patient,” says he, “forms an argument paramount to all others ; it may not be, indeed, superfluous to add, that a perseverance in the mercurial course under these circumstances will seldom restrain the progress of the disease, or be productive of any advantage. The patient must be expressly directed to expose himself freely to a dry cool air, in such a manner as shall be attended with the least fatigue. It will not alone be sufficient to sit in a room with the windows open ; he must be taken into a garden, or a field, and live as much as possible in the open air until the fore-mentioned symptoms be considerably abated.” I should not have here alluded at length to the treatment of John Pearson, did I not frequently witness syphilis and mercury producing, not the exaggerated consequences here spoken of, it is true, but some minor effects, the treatment of which is conducted on the same principles as are recommended by the late surgeon to the Lock, and which are totally opposed to all pathological views. As soon as any symptoms of anæmia arise, many modern practitioners leave off mercury ; but the result is that the disease goes on unchecked in the constitution, and the chlorotic state increases. If the patient is exposed, as above directed, he gets an inflammatory sore throat. Now, anæmia is the result partially of syphilis, not altogether of mercury, as Pearson believed. If this is once allowed, then we must treat the anæmia, and it is not absolutely necessary to leave off mercury, which checks the disease. In my own practice, when I find anæmia coming on, I give iron, combined with mercury ; the result is at once often apparent ; the iron acts in improving the general health, and the mercury acts equally well in curing the syphilitic diathesis. If, however, I am called to see a patient who is in a chlorotic state arising from the mercury only, I recommend that the mineral should

* “Bulletin Thérapeutique,” translated in *Cormack's Journal*, vol. v. p. 289, and “Thesis,” by Dr. McCarthy. Paris, 1844.

be left off, for here Pearson's directions are quite available. But the surgeon should hesitate in leaving off mercury, when the symptoms under which a patient is labouring may depend upon chlorosis, brought about by the syphilitic diathesis. Of all the preparations of iron, I prefer the tartrate of iron or the tincture of the sesquichloride, the latter given in doses of twenty or thirty drops, two or three times a day, in the infusion of quassia; under it the system rallies, the hectic flush disappears, the colour returns to the cheeks, and the patient recovers his usual appearance, when he may again resume mercury, or not, as the indications for its use may or may not be present.* At the same time the diet should be generous: change of scene is frequently advisable, and great good is often derived from being much in the open air, and enjoying regular exercise. I believe much more benefit may be expected from this treatment than the old story of a course of sarsaparilla, acids, and, more recently, iodide of potassium. There are still a large number of patients who think you have not done them justice if you do not prescribe a long and expensive course of sarsaparilla; it is in vain to argue with them, and it is often necessary to lend oneself to these harmless prejudices; but I agree with M. Ricord that sarsaparilla has usurped a reputation which it by no means merits, and, judging from its history, I should say, it gained its character by the older surgeons leaving off mercury when they began to give sarsaparilla; it formed an excuse for letting the constitution lie fallow for a time, and this inert substance allowed the system to rally after mercury had been largely given. Certainly, in the present day, it is fast falling into disrepute, and perhaps nothing has hastened its downfall so much as the introduction of iodide of potassium.

ECZEMA MERCURIALE was indeed the bugbear of the old writers; I have already spoken of its causes and the means of prevention. It would appear, by the account in Pearson's work, to have been formerly much more common than at the present day.

If mercury be given in the manner here recommended, and if its ill effects be guarded against, the mineral will, I think, regain its former high position as a cure for syphilis. It is to be hoped it will never again be used so indiscriminately, nor employed in such large doses as formerly.† What can prove more highly the estimation in which it

* Surgeons who are in the habit of giving the preparations of iron to patients will find that the mineral not unfrequently causes the reproduction of the spots which the mercury has caused to disappear for the instant. In cases where the diathesis exists, this must not surprise the surgeon, or deter him from giving iron when he thinks it necessary for the general health of the patient. The fact, it appears, was known to Swediaur.

† Caries of bone and exfoliation have been successively said to depend upon mercury and syphilis. Sir W. Burnett, in his account of the effects of mercurial vapour on the crew of the *Triumph*, says, that "In the case of a woman who was confined to bed in the cockpit with a fractured limb, not only were all the teeth lost, but many exfoliations also took place from the upper and lower jaws."—(*Med. Chirurg. Review*, vol. iv. p. 1012.)

That mercury will produce this effect on animals is shown by the same author, and I recollect a cat which was kept in the store-room of the Venereal Hospital of Paris, that died of disease of the bones of the head, produced by the effects of being constantly in contact with mercurial preparations.

is now held by its former opponents, than the avowal that they are unable to cure their patients without employing mercurial preparations, and this after abortive attempts, during many years, to find substitutes for a mineral they formerly refused to employ in any case or in any quantity? Let us hope that its *abuse* has passed, and that all will turn their attention to its *use* in the cure of a disease which is becoming better understood.

After having concluded a course of mercury (which, let me repeat, should not be left off until all traces of induration have ceased), the surgeon must turn his attention to the general state of the constitution, which is usually somewhat impaired by the quantity of mercury necessary for the cure. To effect the restoration of the health, recourse should be had to the vegetable bitters, and I know none more useful than the infusion of quassia, which I prescribe in the following manner :—

R. Ras. Quassiae ℥ij.
M. ft. chart. pro infus.

I desire the patient to pour a pint of boiling water on this quantity of quassia, allow the infusion to become cold, and then take it the next day in quantities of a small tumbler full before each of his

The following is an account of its effects on the labourers in the quicksilver mines of Idria.

"According to the statements of Dr. Görbez, physician at Idria, out of 516 workmen, occupied partly in mining, partly in smelting, and partly in the cinnabar manufactory, 122 were in 1856 affected with dyspepsia, ptyalism, scrofula, anæmia, neuralgia, mercurial gout, mercurial tremor, and caries. The labour is divided among the miners in such a manner that fifty-nine men, who are changed monthly, are assigned to the smelting-houses, and nine to the cinnabar manufactory. The occupation in the shaft consists in procuring the ore; in the smelting-house, the ore is heated in the furnace, and the quicksilver is reduced to the metallic state; the cinnabar is obtained by subliming the æthiops mineral. Idria itself possesses favourable climatic and social conditions, and its high mortality (120 annually out of 4500) and the evident sickness of its entire population, are to be ascribed to the influence of the quicksilver. The immediate action of the mercury takes place, according to the author, in the first instance from the fine dust containing quicksilver (from the sweeping of the tubes, &c.), which becomes deposited on the mucous membrane of the mouth and the outer integuments, and produces intoxication. To what an extent this may occur is most plainly proved by the fact that not unfrequently globules of quicksilver are found in the bathing-tubs which have been used. Intercommunication between the affected workmen and the rest of the population, and the air of the valley impregnated with the mercurial vapours, are additional sources of disease. In the second place, particles of dust and vapour are imbibed through the organs of respiration and digestion. This injurious influence extends also to *animals*; thus cows, which feed in the neighbourhood of the furnaces, suffer from ptyalism, become cachectic and abort; the calves themselves are sick; trout, too, which are kept in reservoirs in Idria, lose their red spots when hot scoria are thrown into the river. As prophylactics against hydrargyrosis, the author recommends an instrument, similar to a respirator, for closing the mouth, new milk, cod-liver oil, chewing tobacco or sage, frequent baths, and change of the workmen's clothes; as remedies, iodide of potassium and diaphoretics, and fresh, pure air. As to iodide of potassium, according to the experience of Dr. Guillot and Professor Melsen, it enters into double combinations with all compounds of mercury which can possibly be met with in the animal body, and affords as good a remedy, as it does a valuable preservative, against poisoning with quicksilver. Iodide of mercury can be detected in the urine of those affected with hydrargyrosis who have been treated with iodide of potassium."—(*The Dublin Quarterly Journal of Medical Science.*)

meals. I often combine it with iron. I also frequently give quinine. This tonic plan has with me at least almost entirely superseded sarsaparilla and its adjuncts, and will be, I think, found far more efficacious.

A course of iodide of potassium will be expedient after mercurial treatment. How this is to be given, in what doses, and with what precautions, will be more properly considered at a later period of this treatise, when I come to speak of this preparation as a remedy in tertiary symptoms.

URETHRAL CHANCER.

It is comparatively recently that the attention of the profession has been called to this form of chancre—one which explains some of the most important principles of venereal diseases, and therefore deserves our consideration under a separate section. The existence of true urethral chancre is now placed beyond a doubt, and English surgeons admit that specific ulcers may exist in the urethra as well as in other parts of the body, and that they may, when indurated, give rise to secondary symptoms.

A discharge from the urethra may, moreover, become complicated with chancre in the urethra, and thus what a few years ago was thought to be only a common case of gonorrhœa, may depend upon chancre in the urethra, accompanied with a purulent discharge. This complication accounts for the occasional occurrence of secondary symptoms following discharges from the urethra; a circumstance that for a long time puzzled the practical surgeon, and induces some few still to believe that gonorrhœa occasionally produces secondary symptoms.

It is somewhat surprising that previous to M. Ricord's investigations, urethral chancre should have obtained so little notice. No surgeon in the present day need look far without discovering numerous cases of simple sores on the glans penis at the margin of the meatus, which extend more or less into the canal of the urethra, in no respects differing from chancre as described at p. 275, except that the urine has a tendency to irritate the sore, and prevent its healing.

It is not uncommon to meet with other cases where chancre in the urethra is only brought into view when the lips are held apart by the fingers, as in Plate V. Fig. 5, when the concealed chancre will appear clearly. Analogy would lead us to expect that chancres might exist in the urethra a sufficient distance from the meatus to prevent our seeing them; they would then give no other symptom of their existence than the discharge they give rise to or the tenderness felt on external pressure. Inoculation of the secretion and post-mortem examination of persons who have fallen victims to this complaint fully bear out this conclusion, and clinical observation teaches us that we may meet occasionally with chancres existing along the whole course of the canal.*

* One such instance is delineated in M. Ricord's "Iconographique." Plate VIII.

DIAGNOSIS OF URETHRAL CHANCRE.—Provided a sore can be brought into view, an absolute diagnosis may at once be made by inoculating with the secretion, and if it succeeds, no doubt can exist that we have to treat a chancre and not common ulceration. But if the chancre has already healed, or its specific characters are lost, inoculation will afford us no means of judging of the character of the affection, since to produce the specific pustule on inoculation, the sore must be in a progressive state.

In practice there is often great difficulty in diagnosis. The patient may not apply early, a chancre may not be visible; the patient may not be willing to submit to inoculation, or he may be suffering from severe discharge from the urethra; or there may be phymosis, or some other complication. In the cases of simple urethral chancre which have fallen under my notice, the patient usually states that the discharge from the urethra has not commenced until many days after connexion. An American gentleman, who came under my care in 1850, stated that a month elapsed between the time he last had connexion and the appearance of the discharge, which Sir Joseph Ollive of Paris had characterized as urethral chancre, and for which he was under treatment. If this were an isolated case, it might be supposed an exception; but in the former edition of this work I drew public attention to the same fact, and subsequent experience induces me to believe that the appearance of urethral chancre may be delayed some considerable time; probably the virus is pressed into one of the lacunæ, so numerous in the neighbourhood of the meatus, and some time elapses before the lining membrane is corroded, and the virus comes in contact with the cellular tissue. This would be quite in accordance with the laws of syphilis. Be the explanation what it may, certain it is that many patients repeat the same story, and thus the history may be made available in the diagnosis.

A more detailed account of another case may be interesting.

Indurated Urethral Chancre with Secondary Symptoms. Sept. 29, 1847.—Mr. W. desired me to meet him in consultation about a gentleman who was suffering from secondary symptoms, the result of gonorrhœa. The history of the case is the following: A. B., about twenty-seven years of age, contracted, five months since, when at Cambridge, what he believed to be gonorrhœa, namely, discharge from the urethra, slight scalding, &c.; he took capsules, mixtures, &c., which did some good, but as rheumatism came on two months after, he took colchicum, and the case was treated as one of gonorrhœal rheumatism, by Mr. F. of Cambridge; still the gonorrhœa continued, and A. B. went to Ramsgate for the benefit of his health; there he came under the care of Mr. C., and for the first time (the patient says) a sore place broke out on the orifice of the urethra. Mr. C. gave him small doses of mercury and sarsaparilla for about a month, and the excoriated surface healed; and in a letter to Mr. W., on his patient leaving Ramsgate, Mr. C. said he had a suspicion that there was a syphilitic taint lurking in the system, and recommended his mouth to be slightly affected. It was after these five months of treatment that my opinion was asked on the nature of the case, and I found A. B. in the following condition: the body covered with patches of herpes

or eczema, consisting of little circles of four or six vesicles, which had become dry, and having a somewhat annular appearance, nearly similar to those depicted in Plate X. bis, of M. Ricord's plates; the throat inflamed and red and painful on deglutition, with something like condylomata on the surface. On examining the penis, I found the orifice contracted, and the gristly induration most evident. I had no hesitation in considering this a case of indurated chancre of the urethra, which had existed five months (for my patient had not had connexion since that period), followed by secondary symptoms of a most characteristic kind. Now, had this patient gonorrhœa in the commencement as well as an urethral chancre? It was impossible to say at the period I was consulted; but that the chancre had existed for five months is beyond doubt, although the induration had appeared only six weeks. This, doubtless, is the sort of case which has often been cited as one of gonorrhœa producing secondary symptoms, whereas the fact is that *chancre* produces a discharge from the urethra, and, subsequently, secondary symptoms. How far this diagnosis might have been made at an early period of the disease, I am unable to say, but I mention the case as an instructive instance of the complaint. It shows moreover the inutility of the ordinary treatment of discharge in cases of urethral chancre. Probably the rheumatism was not of a gonorrhœal character, but that which usually precedes syphilitic constitutional disease. The patient entirely recovered in a few weeks under five grains of hyd. c. creta every night, warm baths, and an astringent gargle to the throat.

The discharge in urethral chancre may at first be very slight, and indeed may almost pass without observation. It is at first rather serous than purulent, seldom becoming muco-purulent, in this respect assisting our diagnosis; it is often of a rusty colour, at the same time small in quantity, and in the more serious cases contains detritus of the animal tissues.

The trifling nature of the discharge, and the length of time that a chancre in the urethra may last, are facts deserving of attention, inasmuch as they may serve to explain the occurrence of primary sores in married women and hereditary disease in children, instances of which are continually published, and which authors are disposed to consider as proofs that secondary symptoms in the husband are communicated to the wife through the child. This question will be further alluded to in speaking of syphilis in children, but let the reader recollect that there must be great doubt in all such cases unless minute attention has been paid to the urethra, so that no urethral chancre has been overlooked.

The importance of the great discretion which it is necessary for the surgeon to show, has been lately impressed upon me by the following case. An old fellow-pupil at St. Bartholomew's Hospital, now established in a distant part of the country, treated a young man for some venereal affection and secondary symptoms; when he was nearly well, this patient asked his doctor's sanction to a marriage which he was about to contract. The penis was free from disease, as my friend believed, no sore being apparent, though a few blotches remained on the abdomen, and he consented. The marriage was solemnized, and

in a few months secondary symptoms broke out in both the husband and wife, and presented the well-marked coppery blotches. My friend assured me of the correctness of the statements of both parties, but in conversation he accidentally alluded to a stricture of a very obstinate nature which his patient had had previous to marriage. The views of M. Ricord on the existence of chancres in the urethra were till then unknown to him, but, after weighing them, he agreed with me in the possibility of the wife having been in this case directly inoculated.

Until induration commences, the diagnosis is not much assisted by pressing the canal, as pain will be felt in gonorrhoea as well as in chancre. If induration be felt, it need not be the result of specific induration, as abscess along the canal will simulate it, and chancre may exist in the urethra without any induration. Micturition gives us little assistance in diagnosis, as there may or may not be scalding in passing water. Although then some information may be gained from these different symptoms, the principal dependence must be placed upon inoculation, which should be tried in all cases where a surgeon has any doubt about the diagnosis of discharge from the urethra.

Inoculation often only serves to corroborate our suspicions previously aroused by external signs. In these cases we observe a remarkable appearance in the meatus, by which the lip corresponding to the side on which the sore is situated, becomes swollen; frequently we meet with a cupped depression of the meatus, which presents a striking contrast with the swollen state of the glans. This is attended with a very slight rosy or brownish discharge, which will often escape the attention of the patient. On pressing the parts between the fingers from above downwards, the whole of the parchment induration described at p. 336 can generally be felt. In some cases the whole or part of it can be exposed to view.

The diagnosis may be further complicated by phymosis. I saw such a case during my late visit to Paris; a man presented himself with induration between the glans and prepuce, attended with phymosis, and it was impossible to diagnose the case closely; but as there was hardness of the glands of the groin, M. Ricord considered it to be indurated chancre, and not dependent on vegetations, calculi, or encysted chancre.

The cases one meets in practice are sometimes very puzzling. Let me cite the following. In 1856 a Member of Parliament came to me with an attack of what he called gleet. On feeling the orifice of the urethra there was a firm indurated mass secreting a thin serous fluid, but opalescent under pressure. The case looked very like an indurated chancre that was about to ulcerate. The general health was good. On exposing the glans I saw on it several patches of the colour of ham, from which oozed a little secretion. There was some œdema of the prepuce; as these looked very like secondary symptoms I examined the body, which was free from spots except the anus, on which there were a few slight stains as of incipient condylomata. The history he gave me was that he believed these appearances arose from excoriations produced from excesses with one female and the heat of the weather. The treatment I adopted consisted in violet powder, lead

lotion and capsules. I had however great doubts on the nature of the case, and I expressed them to my patient. Under this treatment he recovered, although very slowly, and he has never had secondary symptoms. To this day I cannot say what the affection may have been; perhaps one of those abnormal instances of bastard induration that future investigations may explain. (See pages 343 and 344.)

PROGNOSIS.—The prognosis is usually favourable, so much so, I believe, that we cure a large number of soft urethral chancres without being cognizant of their existence, by means of the injections now generally employed in the treatment of discharges of the urethra. When, however, induration comes on, the case is very different, and the prognosis will be of a far graver character. Urethral chancre is, I believe, one among many causes of stricture; it is probable that many of the cicatrices described by Morgagni and others in the urethra, are due to the previous existence of urethral chancre, which has caused diminution in the calibre of the canal in the neighbourhood of the meatus. The prognosis is, however, not favourable when phagedena attacks chancres in the urethra just within the meatus. I was lately called to treat a case of fistula in this situation, the consequence of urethral chancre. M. Ricord, however, states that he has known several instances of urethral chancres which have formed an ulcerated opening close to the frænum, and yet no fistula has resulted, nor urine escaped.

The occurrence of phagedenic chancre in the deeper portions of the urethra is very uncommon. M. Ricord has met with two instances in which death followed a lingering illness; but such cases are very rare. In the instances in question every means to arrest the disease was tried without avail, and I would refer those desirous of seeing the appearances, to M. Ricord's "*Clinique Iconographique*," Plate VIII., with the annexed description.

TREATMENT.—When situated at the orifice of the canal, we should treat chancre of the urethra on the principles laid down in the preceding pages, taking care to keep the two lips of the meatus separated by a little cone of *châpée*, so as to prevent as far as may be the further extension of the contaminating virus. When the chancre, however, is situated further up the canal, and acute inflammation begins, we must have recourse to antiphlogistics. Leeches, also, either to the perineum or to the penis, together with baths and diluents, may be very useful. Particular care should be taken to avoid erections, as these may cause laceration of the parietes of the ulcer. A cure is best effected by diminishing the congestion of the parts, and we must rather (in the words of M. Ricord) depend on these than upon camphor, belladonna, lupuline, or digitalis.

As soon as the acute symptoms have been relieved, injections of an astringent nature or soothing applications may be tried. It is in vain to attempt to cauterize these deep-lying chancres either with Lallemaude's instrument or other contrivance; we are unable effectually to destroy the chancre, and the only effect will be to increase the inflammation. Much relief will be found by anointing the parts with oil before micturition, as the surface may thus be shielded from the

irritating properties of the urine, and the lips of the meatus may be kept separated by lint steeped in lotions.

A patient lately succeeded in keeping lint applied to the orifice of the urethra in cases where the prepuce does not cover the glans by a very ingenious contrivance. He cut a strip of linen (lint will not answer) about two inches wide and five inches long; about half-an-inch from one extremity he made a slit in the linen just sufficient for the glans penis to pass through. When the penis had been passed through the slit, he turned the upper portion of the linen over the orifice of the glans, and tucked it carefully into the slit, thus protecting the orifice from friction of the trousers.

CHANCRE ON THE LIPS AND TONGUE.

Ancient writers have remarked that chancres situated on the head or face were quickly and fatally followed by constitutional symptoms, but it is only within the last few years that attention has been more specially called to the following peculiarity of all chancres on the face and head.

It has been above remarked that chancres on the body and extremities may be either of a *soft* or *hard* character. This is not the case with chancres on the head and face. "During twenty-five years of practice I have never," says M. Ricord, "met with a single well-authenticated case of a *soft* chancre being developed on the face and head. I have met with chancres on the lips, on the tongue, on the eyelids, forehead, nostrils, and amidst the hair, but they are invariably of the *indurated* or *infecting* kind, and are followed by all the symptoms peculiar to constitutional syphilis. Not a single individual has escaped induration and the general contamination of the system together with the subsequent phenomena of general infection."

We may of course take it for granted that M. Ricord's testimony is accurate, but I would ask future experimentalists to endeavour to discover what would be the effect of again inoculating this kind of chancre on the face. I have already put this question to my medical friends in Paris, and they one and all say they do not know and would not like to try. Chancre on the head is in itself an uncommon occurrence, and we are totally ignorant whether, according to the general law, second inoculation would produce a soft chancre on the head. Nothing but observation can answer this question.*

THE CAUSES.—Like all primary sores direct or indirect, inoculation of the syphilitic virus is necessary to produce these sores. Abrasion or injury of the skin, also, is necessary for the inoculation to succeed.

* If, then, all chancres on the head become indurated, the opinion I expressed at page 292, that only one virus exists, is strongly corroborated, for otherwise we must infer that the so-called two viri produce the same sort of sore on any part of the head. This similarity of result could not happen if there were two distinct viri. Why chancres on the head should all become indurated, is one of the mysteries which it is hoped will, in the end, tend to throw some important light on the true nature of induration. At present we can offer no explanation. We must accept the fact.

The virus must come into direct contact with the denuded epithelium in producing this as well as other kinds of chancre. *Secondary symptoms* in one person will not, as we have stated, produce *primary ones* in another. Pipes, drinking-glasses, spoons, &c., may act as the vehicles of transporting the chancrous virus directly from a primary sore on one man's lips to those of another who has an abraded or cracked skin. This method of contagion is possible, but not probable. Many unlikely circumstances must combine. In the first place, primary sores on lips are very rare; again, indurated sores secrete little; again, when they exist on the lips they are visible, and no one is likely willingly to drink from a glass the affected person has used; lastly, the lips, tongue, &c., must be cracked or abraded, for the virus to produce any effects on them. Nor do I think that these sores are often, if ever, contracted by means of the finger of the individual dressing his own sores existing elsewhere. In all my experience I have never met with such a case.

Specific chancres on the lips then, in my opinion, are *accidents excentriques*, as the French call them—that is, arising from practices that the patients may well be ashamed of acknowledging, and which the surgeon need not inquire further about. This description of sore is found more often in young men than old, and in men more generally than in women.

SITUATION OF THE SORE.—On the lip the chancre is usually found on the external margin, but often the whole external thickness is implicated. When the tongue is the seat of disease, it is usually round the tip that it is met with. I have seen some few cases in which it was doubtful if a primary sore did not exist on the throat.

APPEARANCES.—If the lip is cracked, the virus will at once act on the subjacent tissue, and an ugly ichorous, thickened ecchymatous swelling will arise, covered with a partial crust, from whence flows a sanious or serous fluid. The lip will be everted, giving the individual a most repulsive appearance. There is seldom more than one such sore; and consequently, like all solitary indurated chancres, it has a more or less oval shape. In some instances it is of very superficial thickness, like a piece of parchment. Generally, however, the base is more thickened, and the patient is unable to articulate distinctly. Chancres on the tongue present no peculiarly distinctive characteristic. Phagedenic action may occur in these sores, but usually they have an indolent character; and, when left alone, have little tendency to increase, but may remain stationary for months, until they produce swellings under the chin or constitutional symptoms.

In all these cases we are to look for the attendant swellings of the lymphatic glands under the chin. On carefully examining the sub-maxillary glands we shall find them hard, swollen, and sometimes painful. This last symptom, however, is not invariable.

DIAGNOSIS.—When I am consulted about these supposed chancres on the lips, I am always inclined at first to believe that the sores are not of a specific character, but depend upon some other affection. On a close investigation, such will be found to be the case in nine out of ten instances.

Mucous Tubercles or Condylomata are often mistaken for chancre.

There is a form of the former affection which I have often seen mistaken for chancre, particularly when it occurs on the lips of infants. The only means of distinguishing them is, that in the former affection—namely, condylomata, the ulceration (for ulceration is often present) is on the whole soft, or rather has not a hardened base, and that the glands under the chin are not swollen or indurated. In other respects the two diseases may occasionally put on very similar appearances, and it requires an experienced eye to distinguish them without inquiring into the history of the case.

Tertiary Ulcers are also sometimes in these positions mistaken for chancres. I lately saw an instance of this in a gentleman who had been under my care on former occasions. He had on his lip appearances that might have deceived many a surgeon. In this case I was guided by the history and the occurrence of similar sores at the same time on the body, which left no doubt as to the complaint being a form of tertiary syphilitic sores, and iodide of potassium accordingly cured him.

Cancer.—There is one phase of cancer which may be mistaken for chancre, just as I have reason to know that there is a phase of indurated primary sore which has been mistaken for cancer; and I believe that more than one lip has been removed for cancerous disease, which a proper course of mercury would have sufficed to cure. It is impossible for me here to enter into all the details necessary to show the points of analogy and difference between the two diseases. It is sufficient to say that these complaints *may* be mistaken for one another, and great judgment is occasionally required in deciding upon them.

The TREATMENT requires no special mention. Chancre on the lip or tongue must be treated on the same principles as indurated chancre elsewhere. (See page 349.)

SECTION II.

BUBO.

CHANCRE is often, but not always, followed by enlargement of the neighbouring glands. This symptom is usually known by the name of BUBO.

DEFINITION.—Bubo is a circumscribed tumour of a *lymphatic vessel*, or of one or more of the glands connected therewith, and sometimes of the investing cellular tissue. This swelling is confined to the series of glands most directly connected with the ulcer. Those beyond are never subsequently attacked.

It is a curious fact that the irritation never extends, nor is the specific virus ever carried further, so as to pass from one series of glands to the other; the deeper series remaining always free from disease, however much the superficial series may be affected. No

satisfactory explanation of this has yet been given. Hunter himself only says, "That there is an inaptitude in the deeper glands to take on the venereal action."

Before commencing the description of the various kinds of buboes, it may be as well to recapitulate a few leading facts in the

ANATOMY of the lymphatic vessels and glands, as it will enable us more clearly to understand the subject. Müller states in his "Physiology," page 282, vol. i., that "Absorbents *take their rise* as a network, of which the meshes are sometimes irregular, sometimes symmetrical. The meshes are sometimes smaller even than the diameter of the minute lymphatics which form them, so that the network is very close, while at the same time the vessels are very irregular in size; and this structure may, to the superficial observer, have the appearance of aggregated cells, which, however, are merely inequalities and slight dilatations of the vessels, forming a very close network. In other parts, where the meshes are larger, the reticulated structure is immediately evident. The diameter of the vessels varies very much, but they are never so minute as the capillary bloodvessels; and I am acquainted with no absorbent vessels which are not visible to the naked eye."

Thus commencing, the lymphatics of the penis (which more immediately concern us) pursue their course to the inguinal glands, as described by Cruikshank:—

"The absorbents of the penis may be divided into a superficial and deep-seated set. The superficial absorbents arise from the prepuce in three divisions; one on the right side of the frænum, another on the left, and the third directly in the middle on the superior side. Those from the under side make a semicircular turn from the under to the upper side of the penis, whilst those on the superior part of the prepuce run on the middle of the dorsum penis, exactly in the direction of the symphysis pubis. At a little distance from the symphysis, the three divisions unite into one common trunk, which almost immediately again separates into two. One of these trunks goes to the right groin, accompanies those veins which go to the inguinal vein, and terminate near it in those inguinal glands which are nearest the symphysis pubis. The other trunk goes to the left groin, and terminates exactly in the same manner as the former.*. . . The deep-seated absorbents accompany the arteries, and pass with them on the inside of the tuberosities of the ischia, or under the angle of the pubis."—"Cruikshank's Anat.," p. 152.)

"In structure, the lymphatics are very like veins; having, according to Kölliker, an external coat of fibro-cellular tissue with elastic filaments; within this a thin layer of cellular tissue, with organic muscular fibres, which have principally a circular direction, and are much more abundant in the small than in the larger vessels; and again within this an inner elastic layer of longitudinal fibres, and a lining of epithelium, and numerous valves. The valves, constructed like those of veins, and with their free edges turned towards the

* It sometimes happens that a sore situated on the right side of the penis produces a bubo on the left groin (and *vice versa*). This most likely arises from a crossing of the lymphatic vessels.

heart, are usually arranged in pairs, and in the small vessels are so closely placed, that when the vessels are full, the valves constricting them, where their edges are attached, give them a peculiar beaded or knotted appearance. The glands placed on the lymphatic vessels consist essentially of plexuses of the vessels; but, together with the vessels, most of them contain corpuscles, by the action of which, after the plan of gland-cells, it is probable that the lymph is modified, and its elaboration assisted.

"Each gland has an investing capsule of cellular tissue, from which prolongations dip into its substance forming partitions. Into each gland two or three vessels enter, which are named *afferent vessels*; as they enter, their coats are thinned, their external coat separating and becoming continuous with the capsule of the gland (*Goodsir*, i. p. 44). Thus, having only their internal coat and epithelium, they pass into the gland, and therein subdividing, running tortuously, variously dilated and anastomosing, they form a plexus. The vessels of the plexus converging and uniting, form two or more *efferent vessels*, which are rather larger than the *afferent* ones, and issuing from the glands, receive again their external coat, and proceed on their way towards the thoracic duct."—(*"Kirke's Physiology,"* p. 265.)

The *inguinal glands*, to which the lymphatics of the penis converge, are thus described by Cruikshank:—

"The inguinal glands are of an uncertain number, from eight, ten, or twelve, to twenty or more. They are situated principally above the fasciæ of the thigh, though several of them lie under it. These last are placed on the iliacus internus muscle, between the triceps and sartorius. Sometimes several of these glands are collected into one large one, which lies on the upper side of the inguinal artery. Those which are nearest the symphysis pubis belong to the absorbents of the parts of generation in both sexes, and become in the venereal disease the seat of buboes."—(*"Cruikshank's Anat.,"* p. 134.)

Did we judge of the probability of bubo by the abundance of lymphatic vessels, we should say, *à priori*, that bubo ought to be a very common occurrence, seeing the immense network of lymphatics with which the penis is supplied. Experience, however, proves that notwithstanding these anatomical reasons for the frequent occurrence of bubo, it is rare, compared with the frequency of chancre.* In private practice patients of moderately good constitutions seldom ought to have inflammatory bubo; when it happens, either there has been neglect, or the constitution has a scrofulous tendency. In fact, since buboes may almost always be avoided, they are to be considered rather as complications than as consequences of chancreous infection.

Why bubo should be so comparatively uncommon, it is difficult to explain. Some have supposed that the ulceration or inflammation has blocked up the lymphatics which open on these ulcers. Others think that an ulcerating surface is a secreting, not an absorbing surface;

* During the year 1857 M. Fourrier kept a record of all the buboes that occurred in the wards of the Venereal Hospital, under M. Ricord. He found that out of 207 patients affected with simple sores, 65 suffered from bubo in addition, and 142 from the simple chancre, without bubo.

and this is borne out in some respects by the fact, that bubo rarely occurs in the first week of the treatment of a sore, which is one reason why it is so very advisable to destroy a primary symptom by caustic as speedily as possible.

DIVISION OF BUBOES.—There are four different kinds of bubo—viz., 1st. Simple sympathetic bubo; 2nd. Inflammatory bubo; 3rd. Specific or inoculable bubo; 4th. Indurated bubo. These heads, with some observations on a constitutional affection of the glands, will comprise all that it is necessary to notice on the subject.

Sympathetic Bubo.—Irritation alone of the extremity of a lymphatic may, by sympathy, be conveyed along the vessel, and cause inflammation at its distal extremity, just as a thorn in the finger, from the local pain and irritation it causes, may inflame the nearest lymphatic gland. In the same way an ulcer may produce a sympathetic bubo, in which there is nothing whatever of a specific kind; the intervening portion of the lymphatic being apparently free from disease. On the same principle, in cases of stone in the bladder, pain is not felt along the urethra, but the irritation at the neck of the bladder is accompanied with severe suffering and irritation at the glans penis. The irritation may, however, extend along the whole course of the lymphatic vessel, until it reaches the gland, so that the vessel can be traced along its whole course by the swelling, which is readily felt like a piece of whipcord.

Inflammatory Bubo.—If the inflammation be left to itself, the vessel and gland may suppurate, and inoculation will prove that the suppuration has produced nothing but good laudable pus with no specific qualities whatever.

Specific Bubo.—In other cases, again, the absorbents may directly take up and carry away the syphilitic virus unchanged, and even communicate it to a deeper gland. This is now placed beyond doubt by M. Ricord's experiments on inoculation. He says:—

“A patient presented himself suffering under syphilitic bubo, attended with considerable suppuration. I opened the abscess, but after the pus had been evacuated from the cellular tissue, I found in the middle of the abscess a lymphatic gland of considerable volume, and presenting the feeling of fluctuation in the centre. I punctured it, and inoculated the patient with the pus which it contained, at the same time that I inoculated likewise with the pus taken from the surrounding parts. While the pus taken from the gland produced a characteristic pustule (see p. 270), that from the cellular tissue remained without any effect. I made, in consequence of this case, a series of experiments which no longer left any doubt in my mind.”

Dupuytren had previously stated that he had observed pus in the lymphatics in the neighbourhood of abscesses; but many, and Müller among others (page 277), believed that this pus might arise from inflammation of the walls of the absorbents themselves; that this may have happened in Dupuytren's cases is possible, but inflammation could not have produced the inoculable virus in Ricord's experiments. Whether the absorbents take up the virus when there is no lesion of the vessels is not certain. It is quite clear, however, that the virus can be carried

into the first gland, and can there form an internal chancre, making its way to the surface by a destructive process of ulceration, which we shall presently describe.

Indurated Bubo.—In the instances of indurated chancres attended with buboes, we often find an enlargement of the glands of the groin, which assumes many of the characteristics of the induration of the chancre itself. It is as impossible to inoculate from this indurated bubo as from an indurated chancre.

True indurated chancre is always followed by induration of several inguinal glands. This consequence is, as has been stated, one of the principal means whereby to diagnose true from bastard induration.

SIMPLE SYMPATHETIC BUBO.

Sympathetic buboes may occur in the groin, either from direct extension of the inflammation along the lymphatic vessels to the glands, or from sympathy, that is to say, the law which causes one extremity of a living canal to become irritated by sympathy with the other extremity, without the intervening parts of the canal being sensibly affected. The term sympathetic bubo is in strictness to be applied to these last alone. This kind of bubo may arise as a complication of soft chancre, the virus acting only as a common irritant, not as in the third kind of bubo mentioned above, with any specific virulence.

In such a case the course the inflammation takes is as follows:—
“The gland may become sooner or later after the application of the poison, a little enlarged, and slightly painful on handling; so as to resemble a small tumour, about the size of a filbert, situated under the skin, and moveable between it and the subjacent parts.

“This moveable tumour, which at first seems to be caused solely by an enlargement of the gland, increases in a short time in size, and becomes more fixed, in consequence of the disease extending to the surrounding cellular tissue. At this period, the motions of the leg are somewhat painful and obstructed, owing to the morbid sensibility of the diseased gland, and to the diminished extensibility of the surrounding inflamed cellular tissue.

“The tumour now soon forms a swelling of an oblong rather than of a rounded form, projecting in relief from the parts which surround it. The integuments are however, even yet, moveable on its surface, being apparently unaffected or uninfluenced, and of the natural colour.”

If proper precautions be taken and perfect rest be enjoined, the inflammation will gradually disappear, rarely inducing suppuration. If it does, the pus will present no specific character, and the edges of the abscess will not take on any of the appearances of chancre.

INFLAMMATORY BUBO.

The course and termination of the inflammatory bubo is as follows. The first appearance of the affection is frequently the occurrence of an inflamed lymphatic vessel, commencing at the chancre and extend-

ing itself along the trunk of the vessel to the pubes, where it may terminate and form a distinct swelling, or may extend itself to one of the superficial inguinal glands. Instead of gradually disappearing as the simple and sympathetic bubo usually does, the skin over the swelling becomes red and tender.

"The skin also (to take Mr. Wallace's description) becomes adherent to the surface of the tumour, over which it could be previously moved, even after the tumour had become adherent to the subjacent and surrounding tissues. The bubo then for the most part increases with rapidity; the pain becomes of a throbbing kind; some degree of fever sets in, marked by an acceleration of pulse; there is increase of heat, loss of appetite, imperfect sleep, with a general feeling of indisposition; and all these symptoms are more remarkable in the evening and during the night, than in the morning or during the day.

"The swelling now becomes more prominent, and the skin more red and shining, while the tumour still feels hard and resisting; but in the course of a day or two this hardness decreases, and the swelling, which was at first somewhat doughy, soon affords a distinct sense of fluctuation. At this period the shining red skin covering the more prominent parts of the tumour begins to desquamate, so as to form scaly circles; and afterwards assumes a mottled livid appearance.

"The livid patches quickly acquire a deeper colour, often becoming partially black; the cuticle separates from them, and giving way, a larger or smaller quantity of thick yellowish-white matter is discharged through one or more small openings.*

"The process of ulceration or destruction ceases, in general, as soon as those integuments which covered the front of the tumour, and which had been very much thinned before the escape of its contents, have been removed. The ulcer thus produced is now quickly filled up by newly-formed granulations, and its diameter at the same time contracting, the areola which surrounded the sore during the ulcerating stage becomes concentrated into a narrow red margin, from the inner edge of which the new cuticle proceeds; and according as the healing process advances, the outer portion of this red margin acquires a callous appearance, while the inner portion forms a red line, denoting the formation of new skin.

"The period occupied by each or all of the foregoing stages of a primary syphilitic bubo, from its beginning until its cicatrization, is so much under the control of adventitious circumstances, that it is impossible to speak with accuracy on this subject."

VIRULENT OR INOCULABLE BUBO.

The external aspect of this bubo is best seen by referring to Plate VI. Fig. 2. The course of the disease is as follows. During the continuance of a chancre, the lymphatic is noticed to become inflamed, and can be felt like a hard cord extending from the sore to the groin.

* This matter contains nothing but the usual results of inflammation; certainly nothing specific, as is proved by the non-success of inoculation.

Gradually a knot is found in it, which becomes more and more inflamed until it points, bursts, and results in an open sore, presenting all the characters of the original one, Plate VI. Fig. 1 and 2 (both these drawings are taken from the same individual). The sore at the root of the penis is, indeed, a true chancre, from which by inoculation a specific ulcer was reproduced. In these instances it would appear that the specific virus of the chancre is merely conveyed unchanged along the lymphatic, arrested at some particular point, and thus produces its specific effects just as it does when confined in a follicle, and destroying the tissues till it comes to the surface. The case quoted at p. 381 shows that a deeper gland may also be involved.

This form of bubo being a true specific sore, it cannot be expected to get well of itself. Such a spontaneous disappearance of the swelling as occurs in sympathetic bubo is impossible, suppuration of the chancre will necessarily follow do what we will. The specific abscess will reach or make its way to the surface, and we shall have an open bubo, or rather a chancre in the groin, the edges of which will assume all the characteristics of the former sore.

Mr. Wallace's description of this form of bubo is as follows:— "These openings frequently present a ragged, sloughy, ulcerated appearance, with a red edge and cutaneous margin, and with a white pulpy substance on the inner part of the edge, as if the cavity of the bubo or the surface of the ulcer from which the pus is discharged was lined or covered by a stratum of white matter, resembling that which so frequently covers the primary sore during its stage of ulceration.

"The process of destruction thus commenced in the integuments covering the tumour, extends very frequently until all that part of the skin which had been rendered very thin is removed, and until the bottom of the abscess has been so exposed, that the diseased part presents the form of an ulcer, somewhat resembling, on a large scale, the regular primary ulcer."

INDURATED BUBO.

Since a specific bubo reproduces all the characteristics of the original sore, the bubo which results from an indurated sore will likewise be indurated, and will differ from other buboes as an indurated chancre differs from other chancres. One peculiarity is the time of its appearance. It comes on almost simultaneously with the original chancre. Seldom more than a week or ten days elapse after the chancre has become indurated before the induration in the groin appears also.*

* This is the rule, and the occurrence of the double induration is a positive proof that the sore is a true indurated ulcer. When, however (as sometimes happens), indurated bubo does not appear, or at least not for a long time, the result must be waited for before we can decide upon the treatment. The directions given in the following case are applicable to nearly all of the kind.

A gentleman about to sail for Australia contracted a chancre which I believed to be indurated, but I could detect no thickening of the glands in the groin. As he was going to join the steamer at Marseilles, I took the opportunity of his passing

Rare instances occur in which a soft sore may exist more than a year without being attended by induration, and yet after that long period as soon as induration comes on in the sore, the bubo will harden forthwith.

This form of bubo consists of a remarkably hard and indolent tumefaction, not of one gland only, but of a series corresponding to the side on which the sore is situated. These glands are increased in size, and form a series of ovoid tumours, very hard, independent the one of the other, and not attached to the surrounding parts. There is little pain or pressure, and only a trifling amount of inflammation. Of course there are exceptional cases where considerable pain and inconvenience may result.

Mr. Ernest Hart lately showed me a case where considerable œdema of the scrotum was produced by the enlargement of indurated glands interfering with the circulation of the scrotum, producing great inconvenience. To the finger these indurated glands felt just as does the base of an indurated sore.

One of the glands affected generally takes on a more peculiarly indurated character than the others. It is probably this one with which the lymphatic vessel from the sore directly communicates. M. Ricord says that perhaps the smaller glands are only sympathetically affected.

When the primary sore is situated in the centre of the penis, both groins may be equally affected, although more generally induration comes on in one groin only.

This form of bubo rarely attains a greater size than that of a nut; when it does, the presence of some complication will usually account for it. There is at the same time little tendency shown to inflame, or augment in size. Like most indurated sores, these buboes evince an indolent character that is very marked.

This indolence does not prevent complications in constitutions that evince great tendency to scrofula or strumous enlargements. But such complications arise rather from the general diathesis, and are generally quite independent of the disease.*

With these exceptions, then, we may say that indurated bubo *never* suppurates.

It may remain in this indolent state for an almost indefinite length of time, either disappearing with the original chancre, or remaining after all traces of the primary sore have departed.

through Paris to request Ricord's opinion on the case. The professor closely examined him, and wrote as follows:—"Ulceration, dating three weeks from infection. Induration suspicious; but no enlargement of the inguinal glands." Under these circumstances he was furnished with a supply of medicine, and the following directions:—"Apply aromatic wine to the ulceration. If the sore heals without the occurrence of any enlargement of the glands in the groin, or secondary symptoms, the patient need have no anxiety. If, on the contrary, the glands in the groin, or those behind the ears, become enlarged, or if any skin or throat affection supervene, the regular treatment must be commenced at once."

* Amidst the great number of indurated chancres treated in M. Ricord's hospital during the year 1856, only three were attended with suppurating buboes. In these three instances suppuration followed a strumous degeneration of the glands; in two instances inoculation of the secretion produced no effect.

It must, however, never be forgotten that nature does not confine herself within the sharply-defined limits which writers on disease are compelled arbitrarily to lay down.

In practice many of these distinctions disappear, and many of the apparently clear divisions run one into the other. Thus we may have the sympathetic bubo complicating the inflammatory, or both these interfering with the natural course of the acute inflammation of the glands; or we may see (although more rarely) all the other kinds complicating the regular course of the indurated bubo, but when they do, they are only complications. The natural course of the disease will usually be as above described.

I need scarcely here repeat, that chancre does not necessarily give rise to bubo; on the contrary, bubo, with the exception of the indurated variety, is a rare occurrence in the upper classes of society, where the surgeon sees his patient early, and proper precautions are taken.

PREDISPOSING CAUSES OF BUBO.—If chancre be the cause of syphilitic bubo, it is only the proximate or exciting cause. There must be some other predisposing influence, or bubo would be more frequent than it is in proportion to the number of chancres. There are some circumstances which appear to predispose to bubo, which are worth mentioning.

Age has an influence in producing bubo. Infancy is comparatively free from them. M. Ricord has, however, seen an instance in a child a month old.

Old age predisposes but little to buboes, in consequence of less exposure to infection, and sluggish absorption; but it is by no means exempt.

It is at the adult age that the system seems most liable to bubo, and as exposure to the chances of contagion are at this period most common, we do not feel surprised at a greater liability to buboes existing.

The *Sex* appears to play an important part in predisposing to bubo. Statistics show that the male is more susceptible of bubo than the female; it might be imagined that this circumstance depends upon the greater fatigue to which the male is exposed, compared to that undergone by the female; such an opinion, however, is not true, for experience proves that women employed at the public markets, and who carry great burdens, are rarely affected with bubo, and in a far less proportion than in males who, from their social position, do not exert themselves. Some other circumstance beyond that of occupation is required to explain the greater frequency of bubo in the male.

Temperament may be considered as a predisposing cause. The lymphatic temperament appears to be more favourable to bubo than any other, inasmuch as it predisposes to enlargement of glands; the other temperaments seem comparatively exempt.

The *Hygienic conditions* of the patient, as well as fatigue, irritation of the part, &c., predispose to the occurrence of bubo more than any other circumstances.

The *Situation* of chancre in predisposing to bubo must never be lost sight of by the surgeon. While the artificial chancre on the thigh

has never, in the numerous experiments we have witnessed and made, been followed by bubo, yet the natural chancre, when situated around the frænum of the male, the meatus of the female, or at the anus, of either, seldom escapes the complication. Whatever be the explanation of the fact, there can be no doubt that bubo follows a chancre in the last situation very frequently.

The *Size* of the chancre does not seem to have the same influence; we have seen very large chancres existing during a long period of time, and yet unattended with bubo; on the contrary, a small chancre, if situated at the frænum, is often followed by it.

Treatment of Primary Sores has been repeatedly stated to predispose to bubo, many surgeons believing that, by locally treating the chancre, the virus is driven into the system. There is not in surgery a more incorrect opinion than this, and we feel disposed to lay down the contrary principle—namely, that the more speedily and effectually a chancre is destroyed, the less will be the probability of the occurrence of bubo.

Instead of worrying a sore with frequent applications of irritating substances, modern treatment consists in at once thoroughly and effectually destroying the ulcer *in situ* with potent caustics. I believe this is the reason that bubo is becoming less and less frequent. However, it cannot be pretended that the use of caustic will always prevent the occurrence of buboes. But although it may not, in all cases, succeed in preventing them, it will nevertheless render their occurrence less probable. When bubo follows the employment of the caustic, the complaint is not usually virulent, and yields readily to proper treatment.

The idea that when a primary sore is treated by mercury, there is less disposition to the occurrence of bubo, has of late years fallen into disrepute, as it has been found that buboes occur during and after the use of mercury; and even Hunter states that mercury sometimes occasions bubo. I think that mercury has but a slight effect, if any, either in preventing or predisposing to the complaint.

DIAGNOSIS.—The only really important diagnosis the practical surgeon has to make is between the indurated and the other forms of buboes; and the grounds on which he must decide are similar to those on which the diagnosis of indurated chancre itself rests. (Page 345.) When, together with an indurated sore, we find several glands in both groins enlarged, without any tendency to suppurate, we may fairly assume that we have to do with an indurated bubo. On the contrary, when we meet with enlargement of one gland only, which suppurates rapidly, we may assume that the bubo is of the inflammatory type. When induration comes on around the edges of an open bubo, the diagnosis will be governed by the same laws that apply to indurated chancres, to which I refer my readers.

Dr. McCarthy has the following remarks on this subject:—

“The diagnosis of a *virulent* bubo before suppuration takes place may be judged of from the following circumstances:—When along with a sore which has not become indurated, we find a bubo occupying a few of the glands or only one, and situated towards the centre of the groin,—with a moveable base; then we may expect that immediately

an opening is made into the bubo (either by an instrument or by nature), the edges become inoculated with the secretion, and present an everted detached border, exposing a true chancre at the base of the gland.

Scrofulous bubo is so characteristic, that it may be recognised at a glance. It is voluminous, occupying the entire inguinal fossa; a large number of inguinal glands are simultaneously affected; the base is immovable, and appears lost in the iliac fossa, or rather appears continuous with a similar affection of the glands in the pelvis. If the swelling bursts, it does so like other scrofulous tumours; the pus is collected into various little abscesses; their different orifices do not enlarge, but become puckered, and take on a character *sui generis*, presenting those ill-shaped cicatrices and ill-conditioned sores seen in softened tuberculous glands."—"Dr. M'Carthy's Thesis," pp. 19, 20.)

The lymphatic glands of the groin frequently remain enlarged after the entire disappearance of the ulceration which has given rise to them. Such an enlargement should excite suspicion that previous sores have existed.

In chancres at the anus, the position of the enlargement of the inguinal glands deserves notice. Should the sore be situated at the posterior margin of the anus, the bubo will form on the upper and outer edge of the groin, as the lymphatics enter at this point. If, on the contrary, the anal chancre is seated on the anterior margin of the anus (its most usual situation), the bubo will form on the internal corner of the groin, the rendezvous of the lymphatics from this part, which pass under the pubes. On examining the gut, we shall very often find an indurated chancre situated among the folds of the anus, which must be carefully examined, as the patients are not likely to acknowledge the occurrence of these sores.

PROGNOSIS.—The subject of the prognosis of bubo has been already anticipated by what has been said upon the subject of prognosis of the different sorts of primary sores.

The existence of bubo has little effect upon the general prognosis of the complaint, unless the constitution of the patient has been injuriously affected by bad treatment or predisposition to some hereditary affection. In all varieties of bubo, except the indurated, if the appropriate remedies be given, the disease gets well rapidly, and no secondary symptoms will follow, however serious the local affection may be.

Indurated bubo, however, is a very different and more serious matter. It is but a slight *local* affection as compared with the other forms, but it is as much a sign of constitutional syphilis and its consequences as the original sore. It is accordingly well in most cases at once to inform the patient that he is labouring under a severe form of disease. The local inconvenience caused by the bubo is often so slight, that the patient scarcely takes any notice of his complaint, and is too apt to neglect the surgeon's advice; the result is that the local symptoms continue for a long period, neither improving nor getting worse, until secondary symptoms break out on various parts of the body. The occurrence of constitutional symptoms after indurated bubo is so constant that the patient should be warned of

their probability, or rather certainty, if he neglects the prescribed treatment.

The old idea still exists that because secondary symptoms are uncommon in instances where buboes suppurate, the suppuration prevents the secondary symptoms. It appears sufficiently from what has been said concerning the distinction between indurated and non-indurated syphilitic sores, that induration is the sign of the constitutional infection ; and, to a less degree, suppuration that of the disease which is not constitutional. So that the suppuration in no way prevents the secondary symptoms, but is merely a diagnostic sign that the disease is not of such a character as to produce them.

TREATMENT OF BUBO.—The *prophylactic treatment*, or the means of preventing the occurrence of bubo, claims our first attention. As speedy a cure as possible of the primary sore is of the utmost importance ; for although, as we stated above, bubo is not an invariable consequence of primary sores of long duration and of large size, still, as it is directly produced by chancre, it should be our object to cure the latter as soon as possible, as no individual can be guaranteed from bubo as long as a chancre exists ; and the speedy cure of chancre by local means does not render the occurrence of bubo at all more likely.

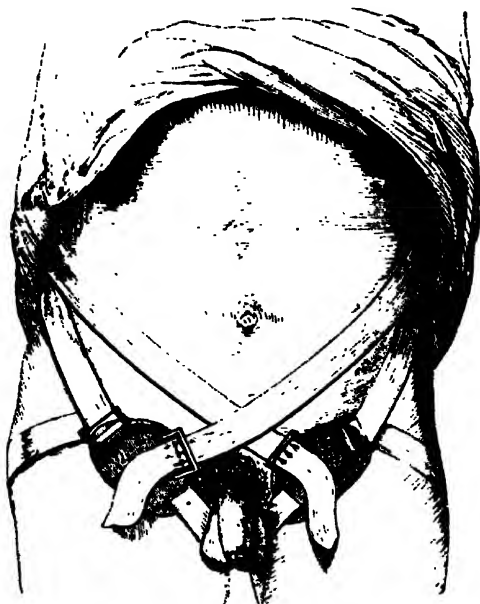
But the surgeon must not depend alone upon a speedy cure of the primary sore ; he should consider and choose that treatment which is least likely to irritate it, and this is undoubtedly the use of the caustics in cases of simple chancre. • To persons unacquainted with the action of escharotics, it might seem paradoxical to state that their effect is antiphlogistic, but it has been already stated that this is their true mode of action. We will consider the different treatments for the various kinds of bubo successively.

TREATMENT OF SYMPATHETIC BUBO.—If, in spite of all precautionary measures, bubo occurs, it is of little consequence at the commencement, as far as the treatment is concerned, to diagnose accurately the nature of the bubo. Cold water, ice, repose on a sofa or bed, with slight clothing, are among the most potent means for bringing about delitescence of the swelling ; cold applications, however, should not be persisted in if they cause pain, or when, as in some few cases, they tend to augment the swelling ; under these circumstances, or if an individual will not submit to any restraint, the best means of treatment is the employment of counter-irritation by means of painting the skin with the tincture of iodine night and morning. We may also use compression, either by means of graduated compresses of linen, fixed in their proper position by a figure-of-8 bandage, or more effectually by the oval truss, of which a woodcut is given on the opposite page.

It consists, as seen in the woodcut, of an oval pad, lined with an air cushion ; to the inner part of which is fixed a strap which passes around the thigh, and then goes through a pulley on the external edge of the pad. The strap is then brought back and passed around the loins and the front of the abdomen, and is ultimately attached by means of a buckle to the pad, thus enabling the surgeon to employ compression to any extent.

When used at an early period, and in the way above recommended,

compression will be found a very advantageous treatment, and will often occasion the disappearance of these swellings.*



TRUSS FOR COMPRESSING BUBOES.

TREATMENT OF INFLAMMATORY BUBO.—When the bubo has already made considerable progress and there is redness of the skin, considerable heat and swelling, but no suppuration, fomentations (which should be continually changed, so as constantly to maintain warmth and moisture) are the most effectual treatment. In place of poultices of linseed meal, the common potato starch, prepared as a poultice by the addition of boiling water, is far preferable; it is not liable to become rancid, and never becomes hard. During the night it may be used most advantageously. In the daytime lint dipped in warm water and laid on the bubo, taking care to cover it with oiled silk and to wet the lint occasionally, is even more cleanly.

There is some difficulty in keeping the proper dressings in their places, if the patient cannot lie up. I generally use the common calico bandages made expressly for these situations, and applied as shown in the woodcut on the following page, with a handkerchief loosely folded over the lint, oil-silk, or other application, so as to fill up the vacant space, if needful. This simple bandage will keep the dressings on at night, and allow the patient to get about during the day.

When, however, fluctuation appears in the swelling, and the skin is thin and livid, the methods recommended above are worse than useless, on account of the loss of time their employment causes; the virus within extends itself on all sides, and the abscess when opened will be found very extensive. To avoid these consequences, the sur-

* These pads may be procured at Bell's in Oxford-street.

geon should open the abscess on the very first symptoms of the occurrence of pus, for it would be useless to expect absorption. The incision should be made in the direction of the greatest diameter of the tumour. In the inguino-crural region, it is in the direction of Poupart's ligament; in the case of suppuration of the vertical glands of the thigh, it is in the direction of the axis of the limb that the incision should be made.



INGUINAL BANDAGE.

In small abscesses a simple puncture is usually sufficient, particularly if there be no reason for supposing that it is a virulent bubo. But when there is a large quantity of matter, when the skin over the abscess is livid, blue, and thin, when we suspect it to be virulent, and the tumour has undermined the surrounding parts to a considerable extent, a free incision is absolutely requisite; for in such cases we cannot expect that the skin will become attached to the parts below. The same principle holds good, likewise, in cases of fistulous openings which extend on either side; they should be freely opened, for, unless this is done, cicatrization will not take place. It is quite unnecessary to press out the pus; such pressure gives rise to pain, and the use of the tent is only requisite in cases of non-virulent buboes, as in others the virus will inoculate the cut surfaces, and prevent closure of the opening.

TREATMENT OF SUBACUTE, ENLARGED, AND INDOLENT BUBOES.—It nevertheless happens that although the acute symptoms are removed, a subacute state of inflammation, or indolent bubo, continues; in the practice of the venereal hospitals I have seen the following treatment attended with success. During the daytime, let the swelling be covered with a plaster composed of ammoniacum and mercury, and compression by means of the truss be made in the usual way; in the

evening let the bandage and plaster be removed, and let a drachm of blue ointment be carefully rubbed on the swelling before a fire during a quarter of an hour, and place an arrowroot poultice over it; on the following day the compression and frictions may be repeated, until all swelling has subsided. In case of the failure of these means, recourse must be had to a more vigorous treatment. It is at this stage that we have seen much benefit derived from covering the tumour with a blister, and, when the epidermis has been thus removed, gently placing the blue ointment on the parts, which may be covered with a poultice; when the blistered surface has healed, a second and third blister may be applied, and the same dressing repeated. The mercury, in all these cases, is employed rather as a local resolvent application than as a specific remedy, consequently it is our object rather to place the ointment on the tumour than to occasion its absorption from the chancre, and thus make it pass through the affected gland—the point that Hunter seems to have had in view; of course, should salivation ensue, the employment of mercury should be instantly laid aside, and the usual means of treating ptyalism be had recourse to.

In place of dressing the blistered surface with the blue ointment; or, which I once practised, allowing a piece of lint dipped in a solution containing twenty grains of corrosive sublimate to one ounce of water to remain on the denuded skin for two hours, or a shorter time (either of which applications almost always caused great suffering); I now prefer painting the bubo over with repeated coats of tincture of iodine, repeating the application as soon as the skin heals. Under this treatment indolent buboes will get rapidly well.

In preference even to this I often employ the actual cautery. A small iron instrument, with a solid bulb about an inch from the blunt point, is heated to a white heat, and the bubo lightly tapped, as it were; the skin being merely touched repeatedly, and the instrument immediately removed after each touch. After the operation the bubo looks as if pock-marked, being covered with about ten or a dozen little pits of a darkish colour. The pain is slight, but lasts some time. The effect is, that either resolution takes place at once, or suppuration is set up in the swelling, and it becomes dispersed. The great advantage of this plan is its simplicity, there being little or no discharge, and no dressing being necessary.

TREATMENT OF SUPPURATING BUBO.—When the surgeon is consulted at this period, or when a bubo has been opened, the treatment must vary with the circumstances of the case.

The first thing, of course, is to discover if the suppuration arises from a simple abscess, or from an internal chancre which is making a passage from the gland to the surface. Inoculation would answer this; but in private practice, or in cases where for any reason it is unadvisable, a few days will clear up the point; for if the abscess arise from chancre, its edges will take on all those characteristic marks of chancre which have been detailed at p. 271.

In the majority of instances, the treatment is similar to that of chancre and its complications. Should inflammation, phagedena, or gangrene be present, the usual treatment of those affections should

be employed. When they are subdued, the treatment of the specific disease may be proceeded with. Care should be taken that the virus does not remain in contact with the surfaces which secrete it; this is avoided by the use of baths, washing the part often, and the employment of astringent lotions by means of syringes; position also may often be useful in allowing the secretions to pass away. Such treatment, combined with cauterization of the abscess, will usually succeed in bringing it to a happy termination, and cicatrization will follow, healthy granulations filling up the cavity of the abscess.

This, however, will occasionally be retarded by an indolent state of the bubo, by the skin presenting livid, thin edges, or being undermined by the disease; in the latter cases it is useless to expect that granulations will spring up as long as these portions of skin remain around the abscess; their removal is therefore indispensable. This may be effected by snipping them off with a strong pair of curved scissors. Patients have often a great objection to the use of instruments, and the scissors may be replaced by Vienna paste,* which, from its caustic properties, not only removes the superfluous portions of skin, but likewise causes the surrounding parts to take on a healthy action.

When the edges of the suppurating bubo ulcerate, when it extends daily, or remains stationary, M. Ricord fills the abscess with the powder of cantharides, and orders a blister on the edges of the bubo; the following morning, if induration exists, the edges of the blistered surfaces are dressed with lint, on which mercurial ointment is spread, and the abscess is washed with an astringent lotion; should it be a simple bubo, common dressing or applications of lead wash to the blistered surface, and the astringent lotions to the abscess, are sufficient.

This treatment with the powder of cantharides is not so painful as might be imagined; healthy granulations spring up, and the whole character of the sore is changed, and it will be often necessary to check the exuberant granulations by the nitrate of silver. In consequence of the extent of the disease, cicatrization will often take place imperfectly or irregularly; the usual means of lightly passing the caustic over the surfaces will be found advantageous; when the cicatrix is livid and indurated, it should be destroyed by repeated and partial applications of the Vienna paste, and a more healthy surface will be the result.

TREATMENT OF INDURATED BUBO.—Should induration of a specific kind follow a bubo, the general constitutional treatment with mercury must be pursued, and we must be guided by the same principles as were laid down in speaking of indurated chancre. (See p. 349.)

The pad spoken of at p. 389 will, however, materially assist us in getting rid of the local induration, and as we have stated when speaking of indurated chancre generally, it is of great importance to get rid of the induration, whether in the base of a sore or in a bubo, by all the means in our power.

TREATMENT OF STRUMOUS BUBO.—For the buboes that affect persons of scrofulous constitutions, tonic and general treatment, such

* The *Pâte de Vienne* is composed of five parts of caustic lime, and six of caustic potash. (See also page 305.)

as change of air, a nutritious diet, tonic medicines, particularly the various preparations of iron, together with local stimulants, should be employed.*

Lastly, in chronic indolent swellings of the superficial or deep-seated glands, neither local nor general treatment will suffice to remove the tumours or to remedy the various obstructions to the venous and absorbent system. In such cases recourse must be had to the *Pâte de Vienne*; a superficial layer is laid on (see p. 254.) and the application repeated again and again as each eschar falls off, until at length the whole mass of enlarged glands has disappeared. This process is often indispensable, although very painful, and is far preferable to excision, as recommended by some authors.

BUBO ARISING FROM INFLAMMATION OF THE GLANDS WITHIN THE PELVIS.

There is a rare form of bubo occasionally met with, apparently consisting of inflammation of the glands within the pelvis, and which in suppurating may make its way outwards. The kind of case will be understood from the following description.

A delicate-looking foreigner came to me in February, 1856, suffering from rupia on the body and a large open bubo freely secreting unhealthy-looking pus. He took syrup of the iodide of iron with cod-liver oil, and some astringent lotion was applied locally. He was recovering fast, when one day he was seized with violent pain in the abdomen, which became tense. This was treated with warm baths, fomentations, and purgatives, and in a short time a free discharge of pus from the old opening still further relieved the abdominal symptoms, and for some time pressure on the parietes of the abdomen caused a flow of sanguineous-looking purulent fluid.

March 10.—He had several attacks of these internal swellings. The abdomen became tense, hard, and resistant, the enlargement evidently lying within the pelvis. The tumour or tumours burst by one of the openings of the groin, and immediate relief followed. As soon as the rupia disappeared, I ordered him to leave off the syrup of the iodide of iron, but to continue the use of the cod-liver oil. Had internal swellings recurred, I should have applied the actual cautery, but under the above treatment he recovered.

I have reason to think that there are constitutional buboes which occur in tertiary syphilis, and depend upon gummata forming in the deep-seated glands of the pelvis, and making their way to the surface.

* Great caution is sometimes requisite to avoid confounding the cachectic or scrofulous bubo with the syphilitic, especially where the scrofulous patient is affected with venereal disease.

I lately saw a delicate young man who had suffered from severe persistent secondary symptoms, requiring repeated courses of mercury. He came to me one day complaining of buboes. The result and the circumstances of the case showed that these arose from his cachectic habit, and not from the special disease. They arose mainly, in fact, from enlargement of the chain of pelvic glands. He had not had any recent sores on the penis. Cod-liver oil, iron and quinine, local applications of tincture of iodine, and country air, were all the treatment he required.

CHAPTER II.

SECONDARY SYMPTOMS; OR, CONSTITUTIONAL SYPHILIS.

THESE form the second subdivision of syphilis, and are the consequences of the absorption of the virus into the system.

DEFINITION.—We include under this term those various morbid phenomena which appear on the surface of the skin or mucous membranes, but do not affect the sub-cutaneous or sub-mucous cellular tissue. They are the direct consequence of absorption into the circulation of the syphilitic virus, giving rise to constitutional affections which are hereditary, or, in other words, capable of transmission* from the mother to the child, but incapable of inoculation. Under this head likewise we place syphilitic iritis and affections of the testicle.

SYNONYMOUS TERMS.—Secondary symptoms have been variously designated by different authors. Some writers have grouped under the term *syphilis*, not only what we now understand as primary, but likewise secondary symptoms, without distinguishing them from one another, or from other diseases. This confusion of terms is not surprising when the difficulties attending the subject are considered, or when we recollect the erroneous notions that have been entertained in this department of surgery.

The same observations apply to *syphilitic affections*, a term which includes indiscriminately everything which resembles the disease we are describing, and one which, as at the present day, has often no very definite meaning.

Morbus Pustularum, la Verole, la Grosse Verole, are likewise synonymous terms; more modern writers have spoken of *Lues, Lues Venerea, Constitutional Syphilis, Accidents, Secondaires* or *Constitutionnels*, as distinguished from the local, primary effects of syphilis. We shall, in the following pages, employ the term *Secondary Symptoms*, as it enables us at once to classify the various affections met with in practice; and it has the additional advantage of being generally accepted. We shall, however, attempt to give a distinct description of the complaints we are about to treat of.

HISTORY.—If we admit that primary symptoms were described and known to authors long before the discovery of America, &c. (see Introduction), we might naturally expect that secondary symptoms likewise existed; and from the description in the Bible, as well as in the Arabian, Greek, and Roman authors, little doubt remains that

* The *material cause* of the phenomena in secondary symptoms is considered by Mr. Simon to be *soluble*, as shown when the fœtus in utero contracts the disease from its mother; for between the circulating systems of the mother and child there can be no other communication than by fluid matters. In some other specific diseases the *material cause* is *volatile*; for persons having no contact with the patient, either directly or (except by the atmosphere) indirectly, are likewise liable to contract the disease; this never happens in secondary symptoms.—("Lectures on Pathology," p. 262.)

secondary symptoms constituted a large proportion of the diseases of the skin then so prevalent; we should, however, add that authors who lived and wrote in those days do not seem to have been aware of their relation to the primary affection.

Towards the close of the fifteenth century we find secondary symptoms more fully described as following primary sores; but even at this period the greatest uncertainty surrounded the subject.

We owe to Fernel, however, in 1556, the first accurate description of secondary symptoms: he first pointed out the relation that secondary symptoms bore to the primary, thereby greatly assisting and contributing to our present more accurate knowledge of both.

In 1784, Hunter, adopting the classification of Fernel, further subdivided venereal diseases into *sympathetic* and *virulent*. The virulent he again classed under two heads.

1st. Those which appear during the first stage of the lues venerea.

2nd. Those which are observed at a much later period.

In the former he placed eruptions on the skin and affections of the mucous membrane; in the latter, diseases of the periosteum and of the bones.

We are, however, principally indebted to M. Ricord for having introduced a scientific classification of syphilitic affections, to which we shall adhere closely in the following pages.

THIS CLASSIFICATION has been already noticed (page 268), but for clearness' sake we may repeat it here.

FIRST FORM.—*The Primary Symptoms* or CHANCRE; the necessary source of every variety of real syphilis, and followed by bubo.

SECOND FORM.—*Secondary Symptoms*; the constitutional sequelæ of chancre, following within a few months of the first infection of the system, affecting mainly the superficial tissues, such as the skin and mucous membrane, but including certain affections of the eye and testicle. These are the affections we are now about to describe.

THIRD FORM.—*Tertiary Symptoms*; appearing still later, seldom before six months from the infection, and frequently after a longer time, affecting deeper tissues, such as the muscles, bones, and cellular tissue.

COMMENCEMENT AND COURSE OF SECONDARY SYMPTOMS.—Ricord gives the following excellent account of these:—"The manifestations of constitutional syphilis may appear in the second or third week after contagion; but the general rule is about the sixth week, and it frequently happens that they do occur in the third month. The complexion then begins to alter; the skin loses its natural brilliancy, and assumes a dull earthy hue; the eye gets dim; the patient loses all bodily and mental vigour, becomes inactive and sad; the hair gets dry, and loses its smoothness; giddiness and headache set in; there is great uneasiness about the neck, and a peculiar supra-orbital pain. The head symptoms generally begin in the evening, and cease towards morning; reclining and the warmth of the bed increase them greatly. It is not quite correct to give these symptoms the name of *nocturnal* pains; for they are entirely dependent on the bed and the horizontal posture, since bakers and people who go to rest by day, have them immediately they lie down. The supra-orbital region seems to be the point most liable to these pains; and when the latter are very acute,

the patient feels as if his eyes were being driven out of their sockets. The affected parts do not, however, present any redness or swelling, nor are they painful to the touch. The headache is sometimes strictly symmetrical, and by occupying one side of the head only, it entirely simulates hemicrania or intermittent facial neuralgia; but with all this there is no apparent lesion observable. If the disease be allowed to proceed, the neuralgia, which had begun in the fifth pair, attacks the seventh, and produces paralysis of the face; and if we were not guided by the chain of preceding symptoms, we might easily ascribe the whole mischief to rheumatism. I have often treated cases of this sort, and I almost always succeeded in curing them by iodide of mercury. I have even met with instances where the seventh pair was primarily attacked, without any previous neuralgia. After all these symptoms, sub-sternal pains come on, which latter Baglivi looked upon as symptoms of latent syphilis; then circa-articular uneasiness, accompanied with great lassitude in the limbs, just the same as happens before eruptive fevers. These articular pains are not situated in the centre of the joint, but all around it; they are fugacious and intermittent; they do not produce any swelling or redness in the part, and are not augmented by pressure; they are vague, erratic, and nocturnal, presenting the same characters as the cephalalgia mentioned above.

Just about this time the posterior cervical glands begin to get involved. This symptom is sure to be present, at least, ninety times out of one hundred cases. These glands are situated at the back of a vertical line falling from the posterior margin of the ear, and the nearer the vertebral groove those which are attacked lie, the more characteristic of syphilis is the symptom. Those situated on a level with the mastoid process have the most value from this diagnostic point of view. The hand must be well practised to recognise them easily, and they might readily be confounded with periostitis. This peculiar adenitis presents, however, a very small volume, the glands feel elastic, roll under the skin, are not painful, and never suppurate. In the obstruction of the posterior cervical glands, which certainly are of great value in diagnosis, it must be noticed that patients beyond forty are seldom affected with it; and that, in case it does not appear within twelve months after contagion, it never occurs at all.

After a little time, alopecia comes on (*Ἀλωπεκία*, the falling of the hair; *Ἀλωπηξ*, fox.) This symptom has been looked upon by some authors as a sign of inveterate syphilis, and by patients as an effect of mercury, which last is an error, for mercury does not cause alopecia, but syphilis will. This symptom, as I before mentioned, is announced by a stiffness and dryness of the hair; it falls at the least touch, and adheres in great quantity to the patient's nightcap; but this falling off is general all over the head, whilst common baldness is always partial at first, and begins at the vertex. Whilst all these symptoms succeed one another, certain changes take place in the circulation. The pulse loses its energy, and a *bruit de soufflet* is heard both in the cardiac region and about the carotids; in the latter, it may go so far as to simulate the *bruit de diable*. These are evident signs of pretty advanced chloro-anæmia. The globules are diminished in quantity, the skin and mucous membranes are shining and discoloured; there is great debility, dilatation of the pupil, &c. Attention should be paid to this anæmic

state, which renders it altogether inexpedient to commence the treatment by bleeding, as some practitioners do. This state of the blood explains many of the symptoms before enumerated. To cursory observation no infallible sign of constitutional syphilis presents itself at this stage, but if the disease goes on unchecked, certain manifestations come on, succeeding each other regularly in the different tissues of the economy, and leave no longer any doubt as to the nature of the affection. These are the strictly so-called secondary symptoms, and may occupy either the skin or mucous membrane, or even sometimes both of them at the same time.”—(*Lancet*, vol. i., 1848, p. 384.)

It is at this period of the disease then that we may say the patient has acquired the syphilitic diathesis; that is to say, the system has become thoroughly contaminated with the syphilitic virus.

THE SYPHILITIC DIATHESIS.—In a recent lecture Ricord thus defines this word:—“It is a *general* affection in the largest acceptation of the word, inasmuch as it attacks all tissues and any organ. This is truly a diathesis.”

Syphilis may so incorporate itself with its victim's system as to create a new *temperament*, a morbid CONSTITUTION. In consequence, Hunter called the syphilitic disease by the term CONSTITUTIONAL infection, “because,” said he, “the virulent matter which originates it, is carried into the common circulation so as to place its impress on all parts of the organism.”

When, then, this diathesis is established, it requires only one of the predisposing causes, to be presently specified, to come into operation, and an outbreak of the complaint immediately takes place.

The period at which the diathesis may appear after the occurrence of the primary symptoms, deserves our attention. It is impossible to limit this period exactly. The earliest term at which they have, as yet, been known to occur, is eight days after the appearance of primary sores. M. Ricord relates such an instance. It happened in a tailor, who, at the end of the week after the occurrence of chancre, had well-marked secondary symptoms. M. Cullerier has likewise mentioned a similar case. Excepting, however, such instances, which are rarely met with at the present time (although we believe them to have been very common in the fifteenth century), secondary symptoms usually show themselves about six weeks or two months after the appearance of the primary sore.* Of the importance of knowing this fact, we have

* Dr. M'Carthy says:—“In analysing my 123 observations, I attempted to show the period which elapsed between the occurrence of primary and the different forms of secondary symptoms.

Forms.	The shortest interval.	The longest interval.	The average.
Roseola . . .	2 weeks	13 weeks	7 weeks.
Papulæ . . .	6 weeks	16 weeks	10 weeks.
Condylomata . .	4 weeks	15 weeks	7 weeks.
Vesiculæ, 3 cases	4 weeks	5 weeks	
Pustulæ . . .	11 weeks	33 months	9 months.
Tubercles . . .	5 months	18 years	10 years.

“These, on a small scale, corroborate M. Ricord's opinions, made on a larger one.

been more than once convinced. Patients come into hospital six weeks after the occurrence of an indurated sore; mercury is given, and in a few days secondary symptoms break out, occasioned, as some erroneously think, by giving mercury. M. Ricord has often demonstrated to his pupils the natural course of the disease by abstaining from any treatment, and the well-known secondary affections soon appear.

Can this period be delayed? It can; as has been often proved by experience. When due precautions are taken, and no excesses or exposure to cold risked, weeks may pass over, without secondary symptoms appearing; but, under the influence of these and other predisposing causes, they will suddenly break out, and recur with more or less virulence, at uncertain periods, for a number of years to come, if not properly treated. In admitting this, however, let us by no means be supposed to give credence to the stories so often told of a sore being healed without mercury, and secondary symptoms occurring, not within six weeks or six months, but six years after. These statements are fabulous; observation proves that if a simple soft sore gets well without mercury, and the patient does not suffer from secondary symptoms within six months, they *never will occur*; he has a perfect immunity from them, provided he contract no second sore.

*But if the sore be treated with mercury, the patient may, it is true, remain free from secondary symptoms some months, or even years.** When they do arise they may be so slight as to pass unnoticed, or they may never arise at all, and years afterwards the tertiary forms may break out.† Such consequences as these are rare, but the surgeon must remember that they may occur.

Duration of the Diathesis.—Once acquired it *may* last for years. It is doubted by some, if it is ever lost. They believe that all treatments act only in postponing or delaying, and are unable effectually to destroy it. The frequency of relapses—a subject we shall presently discuss under the head of Prognosis—might almost seem to corroborate this view, especially in those few cases where relapses go on recurring for years. In this, as in other instances, we must be guided, not alone by the exceptional cases, but must generalize from as large a number as possible of different instances.

Such a generalization leads irresistibly to the conclusion that though, where the diathesis is established, *outbursts of the disease* will, for some time, recur again and again; yet under proper and reiterated treatment they become gradually weaker and weaker until the diathesis seems to disappear.

We thus find that one symptom succeeds the other in a graduated scale, commencing with the most superficial, until we arrive at the deeper-seated ones. In our experience we have never seen the superficial forms of syphilis succeed the deeper ones; and this sequence is so regular that in the majority of cases, a secondary symptom being given, it is frequently possible to say how long since the indurated chancre existed."

* Ricord believes thirty years. See his "Letters," 2nd edition, p. 388.

† Pearson says, "If a man indeed be imperfectly cured of secondary symptoms, he may have a truce for a considerable length of time, and if the imperfect exhibition of the remedy be then (upon a first, second, third, or fourth appearance of the symptoms) repeated, the symptoms may be protracted to an indefinite length of time, but we have never known the disease to be dormant when no mercury has been used."—"Manuscript Lectures," p. 54.)

In December, 1856, I was called to attend a gentleman whom I had not seen for three years.

He showed me on his hand two spots of unmistakeable secondary syphilitic psoriasis, and on the scrotum he pointed out to me some semicircular spots which left no doubt that he was suffering slightly from secondary symptoms ; there was no other symptom on any part of his body, and his general health was good.

His history was that, during the summer, after being free from spots for nine months, he got into very low health, and was obliged to leave business. These spots appeared, and they had not since changed either for the better or worse. He was well aware of their specific nature, and recalled to my recollection having been under my care three years ago for spots of the same kind, only much worse ; he admitted that he had not taken medicine regularly, and as soon as he was a little better, used to leave it off. The disease dated back eight years, and there had been outbreaks every few months during the whole time, which had been successively cured by some treatment or other. He wished to marry, and was fearful of the consequences. I told him that infection was just possible, but that I did not believe it would happen, particularly if his health kept good ; but he had better take medicine, and I gave him syrup. ferri iodidi, with citrine ointment as an application to the hand. I prescribed good diet, and undertook to watch him.

When I saw this case a week later, the spots on the scrotum had disappeared, and those on the hand were better. No new ones had appeared anywhere.

April, 1860.—Within the last twelve months I have seen this patient, who occasionally still suffers from a very few spots of lepra, which disappear under proper treatment.

I have notes of a singular case of slight secondary symptoms occurring every year for, I believe, eleven years, in a regular succession. At one time the tongue would be slightly affected, then the lip, and then blotches would appear on the skin ; it is four years ago since the eye was affected. In Sept., 1857, I saw a man in good health, who had a few spots of psoriasis on his hands, the soles of his feet, and the scrotum, which had recently reappeared after some months of perfect immunity ; he had primary symptoms six years ago, and had been attended by me four years since for a syphilitic affection of the eye.

These are, however, cases so violently exceptional that I have mentioned them here more as examples of what may possibly occur, than as instances from which to form any rule. The usual course is, that *all* symptoms disappear at the end of two years, never to return again.

It is certain that, in nine cases out of ten, the diathesis can be entirely removed, and the patient will perfectly recover.

Can the Diathesis be acquired a second time ? When the last edition of this book was published, M. Ricord had laid it down as an almost recognised truth, that a person who had once had secondary symptoms possessed an immunity from a second attack ; that as vaccine will not act more than once, no more will constitutional syphilis. A patient might, according to him, have relapses of secondary symptoms

dependent upon this primary affection ; but if he once entirely shakes off constitutional syphilis, no primary sores he may contract in future will be followed by secondary symptoms.

Subsequent experience has pretty clearly proved that, though this law is a very general one, still that it admits of exceptions, and that not merely a relapse (which is common enough), but a *bona fide* new attack of secondary symptoms may, after many years, occur in a person who has long since quite recovered from the first.

Still this rule of the *non-recurrence* of secondary symptoms *de novo*, if not invariably true, is very nearly so. Even admitting to the full the protective influence of one constitutional attack in warding off another, it is an important inquiry whether it be permanent, or whether the *protective* diathesis, so to speak, will not wear out after a certain period, like the influence of vaccination. The duration of the protective influence of vaccination has been limited to seven years, after which the constitution is said again to become obnoxious to small-pox. May not the second occurrence of induration, when it happens (see page 343), show that the system has been freed from the influence of the former contamination, and consequently is able again to take up the specific poison. All that we can say at present is, that clinical experience seems to teach us that one attack of constitutional syphilis renders the system for a time insusceptible of a second attack, which insusceptibility generally extends over a lifetime, but that it may sometimes wear out after a number of years.

John Pearson appears to have been aware of this possibility, for he says :—"In lues venerea a person may be affected with constitutional symptoms time after time. We have not seen many instances of this kind, but we are certain of the fact. Persons who have suffered from secondary symptoms are generally more cautious for a time ; but if they do contract a fresh infection they seldom delay long in applying for advice, and hence constitutional symptoms are not often observed in the same individual a second time."—"Manuscript Lectures," p. 55.)

CAUSES OF SECONDARY SYMPTOMS.—In our definition we have stated secondary symptoms to be the direct consequence of absorption into the circulation of the syphilitic virus. This opinion, though generally received, has never been tested by direct experiment. No one has ever, as far as I know, attempted to inject the virus into the circulation. The probable consequences of such an *experiment* would be so severe that no medical man would undertake it, nor would any one be justified in running such a risk. As the syphilitic virus has no constitutional effects on animals, we are deprived of two of the most valuable adjuncts in our investigations. Although, then, we cannot prove the point by direct experiment, clinical investigation leaves no doubt that the primary indurated sore is the first manifestation of the same morbid agent which ultimately produces the constitutional affection. It appears, likewise, from the results of the inquiries mentioned at page 268, that in almost every case of secondary symptoms we can trace the chancre which gave rise to general infection. It may be, therefore, taken for granted that constitutional syphilis is always preceded by a chancre situated in some part of the

body. It is no less true, however, that every chancre is not necessarily followed by secondary symptoms; were this not happily the case, constitutional syphilis would still be infinitely more common than it is. The simple sore is very rarely indeed followed by constitutional syphilis, though the indurated chancre almost invariably is. As to what are the predisposing causes of induration, it has been already stated (page 337) we are quite ignorant. We no longer, however, believe that the induration and non-induration of chancre depend on different viri.

It is curious to observe how arbitrary the phenomena of primary chancres are. Some persons may frequently contract chancres which will neither become indurated nor be followed by secondary symptoms. In other instances the first chancre a patient contracts assumes a hardened base, and is succeeded by constitutional syphilis. The same person who, at one time of the year, resists indurated chancre and its subsequent constitutional infection, may contract it at another time of the same, or the next year. We are at present unable to explain these inconsistencies, except by attributing them to personal idiosyncrasy.

PREDISPOSING CAUSES.—Observation of many thousand cases shows that these consist in circumstances not immediately connected with the individual, nor apparently dependent on his constitution.

It cannot have escaped the observation of those who have seen much of syphilis, that:

*Climate** and *changes of temperature* have a considerable influence

* "Climate, and the extremes of heat and cold, exert a powerful influence on all venereal affections; indeed, I know of no disease in which so marked a difference may be observed, even in the different countries of Europe and those bordering on the Mediterranean; this difference I have remarked in the northern parts of Spain, and in the various hospitals of Lisbon, Paris, Berlin, and Vienna, as well as in Italy and the north of Africa."—"Wilde's Austria, its Medical Institutions," page 186.)

Dr. Clarke, in his report of syphilis in India, published in the *Mudras Quarterly Medical Journal*, vol. 1. page 405, states, that only three cases of secondary symptoms followed in fifty men treated without mercury during the year 1835, in India. He thinks it, however, probable that secondary symptoms would have more frequently occurred if the men had been treated in England, as the disease is milder, and a warm climate does not predispose to the after consequences, but favours a cure. In tropical regions, he adds, disease is of the most acute kind, and rapid in its progress, without entailing such a host of chronic complaints, but in warm climates fever and dysentery usually kill the patients.

He mentions having seen a sailor in the Royal Naval and Marine Hospital at Woolwich, who had been with Captain Parry to the North Pole. This man entered with his palate almost entirely destroyed by ulceration. He acknowledged having some years previously suffered from venereal disease, and was perfectly well on embarkation; but when he arrived in the frozen regions the secondary disease made its appearance.

Dr. Clarke states, page 408, "For many months no case of secondary disease may show itself, but in other months there may be several in succession."

The following extract from Mr. Coote's work requires corroboration, but bears upon this question.

"My friend Mr. Nesbitt, who has had charge of the convicts at Gibraltar for some years, informed me that, although such persons have, at the time of their committal, almost invariably some form or other of venereal disease, yet they scarcely ever suffer from this disease while undergoing their punishment. He could not recollect, out of 1300 patients, a single case of secondary syphilis requiring his attention or treatment."—"Coote on Syphilis," page 16.)

not only on the production, but likewise in causing relapses of secondary symptoms. Rapid changes from heat to cold, as witnessed in persons leaving the warm wards of hospitals for their own damp cold dwellings, place this beyond doubt. Travellers state that the passing from cold to warm, and from warm to cold climates, frequently has the same effect.

Cases like the following every now and then come before me, showing the influence of change of climate.

In March, 185—, Mr. — was travelling in Spain, and at Seville contracted a sore, to which he paid little attention; he continued for many months in the south and felt no inconvenience, but on returning late in the year to England, he noticed spots on his hands and feet, and came to me, when I noticed a slight remaining induration on the sore, as well as well-marked traces of syphilitic lepra. In this case, as in others I have seen, I believe that, had the patient remained in the south, he would have escaped all these consequences.

Clothing, particularly such as is slight and insufficient to maintain an equable temperature, has been accused, with reason, of predisposing to secondary symptoms.

The use of *spirituous liquors*, *highly savoured* or insufficient food, *excitement* of all kinds, *moral* or *physical*, are some of the usual predisposing causes.

Among the circumstances appertaining to the individual, we may first speak of *age*.—It rarely happens that a child is born of a mother suffering under secondary symptoms, without becoming affected soon after birth, particularly if exposed to cold. When the period of infancy has passed, as the child is seldom exposed to contagion, the occurrence of secondary symptoms is very rare. From similar circumstances, and the torpid state of the lymphatic system, they are rarely met with at an advanced period of life.

Sex.—It is hardly necessary to say that men are more liable than women, in consequence of the former exposing themselves to the chances of contagion more frequently; but even if the same risks were run by the two sexes, the female would be found, I think, to be less predisposed than the male. This assertion is supported by the cases we have observed in the Parisian institutions. In the male hospital, cases of secondary syphilis are very common; in the hospital of l'Oursine (the female one), during my duties there, out of four hundred in-patients, I observed few cases of secondary affections. The same remark I made in visiting the foul wards at St. Lazare, devoted to the treatment of the prostitutes of Paris. The reason, probably, is the following. The female, though frequently the subject of chancre, is yet, from her sedentary and quiet life, less exposed than the male to the influences mentioned above. We are further borne out by the fact, that common prostitutes are more frequently attacked with secondary symptoms, than that large class of unfortunate females consisting of poor married women, to be found at l'Oursine.

The freedom which prostitutes appear to have from secondary symptoms, was again brought under my notice last year (1859), in Brussels, where secondary symptoms are almost unknown. The fact is corroborated by the returns published in my work "On Prostitu-

tion," page 48. I believe that in 1855, only three women out of the whole prostitute population suffered from secondary symptoms.

Temperament.—Its influence as a predisposing cause is very evident, and some authors state that the lymphatic temperament is the one which most particularly disposes to the affection. That this is often the case is true, but those who have attended to the subject must be aware that if the same individual, in the course of the year, contracts several chancres, one may pass away, while another may be attended with secondary symptoms, or *vice versa*. Again, we often see the strongest men attacked, and the feeblest escape.

Surgeons who are called upon to treat secondary symptoms cannot but have remarked how many patients that suffer from the constitutional infection present that clear complexion which has been attributed to scrofulous subjects. I do not, however, assert that secondary symptoms are confined to such individuals; but on being consulted for primary sores by patients with dark hair, clear brown complexions, and great transparency of skin, I have often truly predicted the occurrence of induration, and the subsequent train of secondary affections.

Exhausting Diseases.—It must be allowed that a large proportion of secondary symptoms occurs in persons who have been reduced by illness, or some other cause.

Sir B. Brodie relates the following singular case of relapse coming on under circumstances of physical depression.

"A gentleman had secondary symptoms, and I put him through a course of mercurial inunction for ten weeks. He was confined to the house, and most carefully attended to, and took mercury for some weeks after the eruption had disappeared. He seemed to be quite well, and went abroad, and continued so; but at the end of a year, being in Lisbon, he went out, got his clothes wet, and took cold. This was followed by a severe attack of erysipelas, and a Portuguese doctor, very indiscreetly, bled him to a large extent, and an enormous abscess formed. His health became completely broken down, and he had now a return of the venereal disease, the symptoms being worse than they were before. When his health had improved, a surgeon in Lisbon put him under another course of mercury and cured him."—(*Lancet*, Feb. 17, 1844, p. 678.)

Local Irritants.—I must not fail to number under the head of predisposing causes certain irritants, which have the effect of determining secondary symptoms to different parts of the body. Thus, in prostitutes who labour under habitual discharges which keep the labia moist, secondary symptoms will occur only in these situations; and this is so common, that gonorrhœa is supposed to produce the symptoms; the error of this we have already shown. The same observation holds good of persons who determine secondary symptoms to the lips and tongue by smoking short pipes; the disease seemed concentrated on those parts only which are stimulated by the tobacco oil. In a nurse, the nipple alone may become the seat of the symptoms, although it appears quite healthy at the time she first takes charge of the child.

PROBABLE MODE IN WHICH CONTAMINATION OF THE-SYSTEM TAKES PLACE.—After reviewing the causes which are found to predispose to the occurrence of secondary symptoms, it may not be uninteresting to collect all that is known on the *modus operandi* of the syphilitic virus, in the hope that it may render this obscure subject more intelligible to my readers. Experiments have clearly proved that the lymphatics and veins carry on absorption, and although, as we stated in speaking of bubo, physiologists cannot explain the mechanism of the operation, the virus is undoubtedly borne along the vessel, as inoculation detects the unchanged virus in the absorbent gland. (See page 381.)

Observation and experiment, however, convince us that the lymphatics do not carry the virus further than the first absorbent gland; there its passage is stayed; it produces local mischief, virulent bubo forms, and the virus is eliminated as any foreign body is. Certain is it that secondary symptoms rarely follow suppurating bubo, and the absorbent glands seem to answer the purpose of advanced works, which impede or prevent the approach of the enemy to the citadel.

In the case of indurated chancre, when the virus is transported to the inguinal glands, it causes their specific enlargement; but as was noticed in speaking of bubo, one gland appears more especially to be affected by the poison directly. The other gland suffers apparently only from sympathy. (See page 384.)

Observation can teach us no more with any certainty. All after this is left to conjecture, and physiologists can give us but little assistance. It is, however, generally believed, that the mechanism of absorption of the virus in constitutional syphilis depends upon the veins, and this view is further corroborated by the resemblance of the symptoms to those which follow when poisons are injected into the veins.

At the present day the comparison is feeble, but in the fifteenth century, when the famous venereal epidemic raged, we learn that livid patches appeared, that the ulcers on the skin were hæmorrhagic; everything, in fact, bespoke a liquefaction of the blood, such as is occasionally witnessed even at the present day.

The *modus operandi* of poisons is still enveloped in much obscurity. Mr. Simon has, in his recent Lectures, page 276, combated the application of Liebig's theory of fermentation as affording an explanation, and prefers considering the phenomena to be chemical, of that class of chemical actions called *catalytic*, where chemical combinations are modified by the presence of a body, which itself either remains unchanged, or at least does not enter into those new combinations determined by its contact.

He further considers that the constituent of the blood which is affected is not the blood corpuscle, albumen, nor the salts, but that the fibrin and the so-called "extractive matters," representing the "waste of the tissues," are the elements concerned. Mr. Simon thus sums up his theory:—"That certain materials of the blood—materials not essential to the performance of its nutritive functions, are, by certain circumstances, rendered liable to undergo definite and specific changes; under the influence of which they become determined,

with increased rapidity, to the outlets of the body, and irritate these outlets in their passage; that these changes continue until the materials affected by them are completely exhausted from the blood; and that the severity and duration of these changes is in proportion to the quantity of material seeking elimination: that the new matters engendered and evolved under these circumstances are capable in various ways, and with more or less certainty, of producing a precisely similar succession of changes in the blood of another individual, or of any number of individuals; operating always on the same ingredients of the blood as that whence themselves arose, and determining it to the same outlets as that whither themselves were determined; so that the choice of material in the blood, and the choice of outlet in the body, constitute specific characters for the several morbid poisons distinctively, and so that the final products act always as special catalytics for that original material of the blood, wheresoever they may encounter it.”—(“Lectures on Pathology.”)

Whatever be the *modus operandi* of the poison, observation teaches us that frequently no manifestation by external symptoms will accrue as long as the general health is good; but, when any of the predisposing causes mentioned at page 401, come into play, these secondary symptoms become developed, although the blood presents no perceptible peculiarity. Inoculation with it has no effect; in the more advanced stages it is found deficient in iron, and this is all we can say. Now, although it appears that the blood must be in some way affected, it is at first only the skin and mucous membranes and the superficial organs which participate in the disease. Why this should be the case is among the many questions which the pathologist may ask, and seek an answer in vain. But if the disease is unchecked, and allowed to go on, deeper tissues will successively be attacked until tertiary symptoms appear.

ARE SECONDARY SYMPTOMS COMMUNICABLE OR CONTAGIOUS.—By no means hitherto known have we been able to inoculate secondary symptoms or constitutional syphilis. Every artificial way of communicating disease from one individual to another, except that of injecting the virus into the circulation, has been tried by M. Ricord in Paris and by myself in London without producing any effect. Experiments have been tried with the secretion of the individual himself, by means of lancets, removing the skin with blisters, and then applying the secretion of secondary sores and eruptions in their different stages, but with no results. It has been suggested that these experiments failed because they have been tried only on individuals who had already had syphilis. But this explanation fails altogether; for young students and professors themselves, who have never had syphilis, have over and over again inoculated themselves on all parts of the body, and yet in no single instance with success. It has been further objected that, although we are unable to produce the contagion of secondary symptoms artificially, still that it might occur naturally. This, like the other suggestions, has been found not to bear the test of experience. Many years ago I published the following conclusive experiments, showing that persons labouring under secondary symptoms may with impunity have connexion with others, and yet not com-

municate the disease. Let me repeat one or two of the most striking instances.

A poor girl came under my care at the Islington Dispensary with severe condylomata^a around the anus; she was in the habit of sleeping with her mother in the only bed they possessed, which was scarcely large enough for one individual; the result was, that the secretion from the condylomata of the daughter came constantly in contact with the upper and anterior part of the thigh of the mother, and there produced an unhealthy-looking sloughing sore. Several persons to whom I showed this case at the time, regarded it as an instance clearly proving that secondary symptoms were inoculable, and I admit my faith was somewhat shaken; but by dint of good food and cleanliness, the sore in the mother quickly healed, and no symptom like syphilis appeared on the mother, although I watched her case with great interest for a long time afterwards. Here, then, is a source of possible error; for the secretion of irritating condylomata may, like any other offensive matter when applied to the skin of a poor half-fed and ill-clothed creature, produce ulceration of a most unhealthy kind, and be readily mistaken for syphilis, and that such errors have often occurred there can be no doubt.

A medical practitioner wished me to see a female, recently married, labouring under condylomata. To prevent family disputes, I desired the husband to call upon me. On examining him, I could discover no trace of syphilis on his person, primary or secondary; and he then broadly hinted, that since his marriage he had heard of his wife's immorality previously to his acquaintance with her; this she subsequently acknowledged. Now had she been able to infect her husband, most practitioners would have disbelieved the husband's statement, and pitied the unfortunate wife. This case, however, proves what experiments induce us to believe—viz. that condylomata and secondary symptoms are not contagious; and confirms my opinion that secondary symptoms are not either artificially or naturally contagious.

In a late (Oct. 1859) visit to Paris and Brussels, I particularly inquired of the leading surgeons to the Venereal Hospitals, whether in their experience secondary symptoms are inoculable. Both M. Cullerier and Puche in Paris, and M. Thiry in Brussels, agree that they are not, and their united experience is very large. They attribute the apparent exceptions that have been brought forward to prove the contrary to incorrect observation.* It is probable that they are

* During the last year (1859) the French Academy of Medicine have come to a different conclusion from that expressed in the text, and have voted that secondary symptoms *are* communicable.

As cases may arise in our courts of law requiring a decision between these contested opinions, the profession in England should, I think, not only be made acquainted with, but carefully bear in mind the recent scientific opinions embodied in the French report. Those desirous of studying the whole question will find the report, and the discussion to which it gave rise, fully detailed in the official bulletin of the Imperial Academy of Medicine, in Paris, for the 31st of May and the 15th of June, 1859. I can only give a summary of the report in this place.

In October, 1858, the Minister of Agriculture, of Commerce, and Public Works, requested an answer from the Academy to the two following questions:—

1. Are constitutional syphilitic symptoms contagious?

right, for the misleading indications and sources of error that are met with in practice in such a matter as this, are of course very numerous.

DIAGNOSIS.—In forming a diagnosis on any supposed secondary symptom, the surgeon will, of course, never neglect to inquire *into the previous history* of the patient; this will aid him materially, but let it be remembered that, unless care be taken, it may tend equally to deceive him. It is not only necessary that a chancre should have

II. In a contagious point of view, has the product of these symptoms in children at the breast different properties from those noticed in adults?

The French Academy, after a long and important discussion, came to the following conclusions:—

1st. There are *secondary*, or constitutional symptoms of syphilis, which are manifestly contagious. At the head of these symptoms we must range the mucous papule, or flat tubercle (condylomata).

2nd. This rule holds equally good in the instances of the nurse and the nursling (suckling), as of other subjects, and there is no reason to suppose that in cases of children at the breast, the product of these symptoms has properties different from those which we knew it has in the adult.

The report was drawn up by M. Gibert, and the commission was composed of M. Velpeau, Ricord, Depaul, and Devergie. It is stated in a foot-note, that M. Ricord desired to reserve his opinion, and to give his interpretation of the facts when the report came on for discussion.

The subjects experimented on were four patients affected with lupus, but who had never had any syphilitic affection. The skin was removed from the arm by blisters, and lint steeped in secretion taken from condylomatous sores around the anus of a man who had had a primary sore fifteen months before, was applied to the denuded skin. The Report states, as results of the experiments, that,

1st. Local lesions, consecutive to the inoculation of secondary symptoms, never appear before the end of the second week, and generally speaking, only occur at the conclusion of the month. *This length of incubation is a characteristic fact.*

2nd. The first alteration, consequent on inoculation, always occurs at the point where inoculation has been made, and remains for some time confined to that point. It has so essentially chronic a course that if the case is left without treatment the local symptom will still persist, even up to the time when the general symptoms show themselves

3rd. The local affection exhibits itself *under the form of tubercles*, which ulcerate after a certain time, may become fungous, and usually cause swelling of the lymphatic glands.

4. The general symptoms seldom commence before the end of the month, and often later, even after the first local manifestations have disappeared.

It is impossible for me here to state, at any length, the objections made to this report by M. Ricord: he pointed out the sources of possible error in the experiments, without asserting that any had been made.

He was not present when the experiments were made, and could not therefore fully accept, nor altogether reject the results obtained. Nevertheless, these results, as he stated, were opposed to all his past and present experience. The experimenters, as he showed, differed among themselves, and the conclusions come to did not agree with those arrived at by others on similar data. He terminated his speech by giving the following very qualified assent to the report:—

"Hence, I conclude, that this report, which is about to be addressed to the Minister in reply to his demand, ought to be couched in terms of the most rigorous reserve. Admit, if you will, *the possibility* of the contagion of secondary symptoms, but do not specify anything more at present. *Fiat lux.*"

It was, and I believe still is, a subject of general regret among M. Ricord's colleagues in Paris, as well as his many admirers and friends in London, Brussels, and elsewhere, that so eminent a man should have made even such an admission as this. The prevailing opinion undoubtedly still is, that there is insufficient evidence, at present, to establish the contagion of secondary symptoms.

preceded the symptoms concerning which a decision has to be come to, but it must have occurred within a certain length of time, otherwise the relation between the cause and effect is not apparent. There are persons who, when they find that chancre has once existed, consider every morbid symptom during the lifetime of the individual as due to that cause.

When we learn that no chancre, but only gonorrhœa, in the male or female, has preceded (provided other reasons indicate it), we may often suspect that chancres have escaped the patient's notice. Daily experience demonstrates that chancre may exist in the urethra in the male, or in the vagina or neck of the uterus in the female, and yet only give notice of its presence by a slight discharge. Hence we must not rashly conclude, that although a chancre has existed, the *symptoms* under which a patient is labouring are syphilitic or secondary; or when no primary symptom, but only a leucorrhœa, has been observed, deny the symptoms which bear the mark of syphilis to be really specific, because they are not corroborated by the patient's antecedent history.

The surgeon should attempt to discover, by interrogating his patient, whether the sores were indurated or not.* A knowledge, likewise, of the existence of suppurating bubo may be useful; for we have stated, in speaking of bubo, that the indurated chancre is rarely attended with suppurating swelling in the groins; and, lastly, it will be always well for the surgeon to examine minutely if any traces of indurated chancre or bubo exist at the time of investigation, and not rest satisfied with the denial of the patient. M. Ricord, in speaking of diagnosis, says:—"One of the most important characters of secondary eruptions is a total absence of pruritus, whereas itching is a very frequent symptom of the other kinds of eruptions. When, however, the syphilitic rash occurs in naturally pruriginous regions, as the anus,

* M'Carthy says: "In 123 cases of secondary symptoms, indurated chancre had preceded the eruptions, and been recognised in the hospital, or the patient recollected having felt it, 118 times. In one case only the patient could recollect that a clap only had preceded the condylomata which we observed on the patient; but this clap was attended, he told us, with a bloody discharge, which occurred seven months previous to the patient's admission into the hospital.

"In four cases we were unable to obtain accurate recollections on the subject of induration.

"The examination of these 123 cases clearly proved to us, in consequence of the frequently unexpected situation of the primary sore, the reason why we daily meet with cases which give persons reason to suppose that secondary symptoms may arise spontaneously.

"In six cases the sore was seated in the urethra, where inoculation enabled us to recognise it three times; in the other cases, the disease, at first concealed from view, ultimately appeared as an urethral chancre at the meatus.

Four times at the anus.

Once in the nostril.

Once on the chin.

Once on the lip.

"Suppose we take these 123 patients, and compare those primary symptoms, for the purpose of attempting to discover some one character which appears sufficiently often to enable us to draw a deduction from it; we find that *in one and all* the inguinal glands have been observed enlarged, but suppuration took place only *twice*, and in these instances the buboes had a scrofulous appearance, and it was not possible by inoculation to obtain the specific pustule."—"Thesis," Paris, 1844.)

the genito-crural fold, the axilla, &c., there may be a good deal of itching, but the latter is then produced more by the irritative properties of the secretion, than by the eruption itself. Syphilitic eruptions, which you will bear in mind can never spring up spontaneously—viz., without the existence of a primary symptom,—are not preceded by any febrile phenomena; the eruption may be said to be apyretic and indolent, involving in a very short time the whole body, and appearing, in some degree, by successive instalments. They do not, as has been asserted, affect the face in preference to any other part, but they spread indiscriminately all over the frame. The smell which they have been supposed to emit is far from being a specific one; in fact, there is none at all, except when the suppuration is very abundant, or when the eruption includes parts where it causes a muco-purulent secretion, as, for instance, mucous papules or patches do; but I repeat it, there is nothing specific in the smell, nor in the copper colour mentioned by Swediaur, nor the ham-like hue spoken of by Fallopius, which latter has been with reason looked upon as an important sign, and an absolute and constant characteristic. In the secondary exanthematous eruptions, which generally come on in the earlier period, there is as much redness as with the common exanthemata, and no alteration in the cutaneous pigment is yet observable; so that no reliance can be put on the colour, and it often happens that men, accustomed to treat skin diseases, mistake simple eruptions produced by the gum resins for syphilitic exanthemata. At first the redness is a mere congestion, which readily disappears on pressing with the finger; a little later, it becomes an actual stain, on which pressure produces no action. These purplish-brown stains are also met with in psoriasis, in lepra, and in other diseases: but they generally are surrounded by a much darker areola in secondary syphilis than in any other affection.* The *seat* of the cutaneous manifestation is not of much value as to the diagnosis; for they may spring up anywhere, as well on the genital organs as in other places. In general, we find the earlier eruptions settle on the flexures of limbs, and the later ones on their anterior surfaces; this is particularly the case with the inferior extremities. You recollect, no doubt, that I mentioned before, that secondary symptoms sometimes simulate a primary sore. Nothing, in fact, resembles an indurated chancre more than an ulcerated mucous tubercle, seated on the thickness of the skin or mucous membrane, particularly when it happens to be solitary, and to be situated on the generative organs. As to shape, you will find that secondary eruptions generally present rounded and well-defined patches, the colour of which may in the centre be more or less deep. When the disease is of some standing, they will form distinct groups, which assume the annular or the crescentic form; also that of the figure 8. (See Plate V. Fig. 3.) When they take the shape of segments of a circle they are more defined than in common eruptions. Secondary cutaneous manifestations have very little tendency to suppuration, unless the subject be constitutionally predisposed to pyogeny, and when

* I have mentioned, at page 373, an eruption as having occurred on the glans penis, which deceived me, from being completely ham coloured. It, however, went away under simple treatment.—W. A.

matter *does* form, it is generally small in quantity, and far from laudable in its nature. The eruptions which do not suppurate will in time disappear altogether, and thus terminate by resolution or desquamation. The scales in these cases are less brilliant, and thinner; they dry more quickly, fall off more frequently in a furfuraceous form, than in non-specific affections, and the scales sometimes come off in large shell-like pieces. Syphilitic patches sometimes become covered with crusts of various dimensions, and of a dark-greenish or blackish hue; their surface is cracked and broken, and generally thicker than in common eruptions. These crusts are sometimes so adherent, that they remain fixed on the spot, notwithstanding cicatrization; they are, in some degree, grooved in the scar, and in some cases the crust is loosened, by gradually turning up at the margins, as the cicatrix is progressing from the circumference to the centre, and it finally falls off, when cicatrization is complete. In cachectic subjects there is much tendency to frequent hæmorrhage.

"The crusts sometimes accumulate, layer after layer, and form distinct prominences, which constitute the affection known under the name of rupia. When, by the falling of the crust, the ulceration becomes apparent, it assumes generally a rounded form; its fundus is greyish and pultaceous; it is surrounded by a darkish areola; and there is a certain induration in the margins. The tendency to phagedena is rare, but still it does sometimes happen that these ulcerations make great havoc, by extending very rapidly. Bear in mind that secondary syphilitic ulcers cannot spring up spontaneously as it were; they are always preceded either by some eruption, as ecthyma, rupia, papules, or tubercles; such ulcers rarely follow vesicles or psyrdracious pustules.

"The cicatrices left after secondary eruptions are very peculiar in one respect—viz., they may exist without any previous abrasion of surface; this is more especially the case in the papular and tubercular forms. It seems that, in such cases, a plastic effusion takes place, and causes a certain hardness of the part; when this fibrinous secretion becomes absorbed, a regular cicatrix ensues, and may be looked upon as the result of a kind of atrophy or falling in of the textures, brought about by an obliteration of the vessels. In some cases, the tubercle assumes a fibrinous nature, and forms a prominent thickening, which consists principally of nodules. The secondary syphilitic cicatrices are in general round, of a purplish colour, and arborescent; after a little time they turn whitish, and soon get depressed; they have, however, been seen on a level with the skin, and very rarely prominent. I must distinctly state that these cicatrices do not possess an unmistakeable character, there is always a doubt in the matter; and it would be very presumptuous to risk a decided opinion as to their nature, particularly in a court of justice. The cicatrices which follow the pustules produced by frictions with tartar-emetica—those of ordinary rupia and ecthyma, as well as those resulting from burns—have a great resemblance to the cicatrices caused by secondary syphilitic ulcerations.

"To sum up then, it is evident that we cannot rely on any absolute, well-defined characteristics to assist us in distinguishing secondary

venereal eruptions from ordinary ones. We must take advantage of all the circumstances of the case, the antecedents, &c. ; and if I were to give the preference to some characters above others, I would say that the absence of pruritus is of much weight, for this hardly ever occurs in secondary syphilis, while it may be looked upon as the essence or common eruptions ; next to pruritus, I would place the copper colour ; but this peculiar hue of the cutaneous phenomena is liable to lead us into error, for ephelis and pityriasis present almost the same tint."—(*Lancet*, *loc. cit.* p. 438.)

We must, I think, conclude, that the diagnosis then of secondary symptoms is by no means so easy as some have supposed. I might have cited many authorities, but I am content to add that of Hunter, who says, p. 466 (Palmer's edition), "There is hardly any disorder that has more diseases resembling it in all its different forms than the venereal disease. For probably the venereal can hardly be demonstrated in any case, especially in the form of *lues venerea*, from its not having the power of contamination.

"The symptoms produced from the infection, when in the constitution, are such as are common to many other diseases—viz., blotches on the skin are common to what are called scorbutic habits, pains common to rheumatism, swellings of the bones, posterior fauces, and to many bad habits, perhaps of the scrofulous and rheumatic kind.

"As errors in forming a judgment of a disease lead to error in the cure, it becomes almost of as much consequence to avoid a mistake in the one as in the other ; for it is nearly as dangerous in many constitutions to give mercury when the disease is not venereal, as to omit it in those which are."—(Page 470.)

PROGNOSIS.—When we see an otherwise healthy individual, soon after the occurrence of secondary symptoms which may have broken out a few weeks succeeding the cure of chancre by simple local means, we may usually promise him speedy relief, provided he will, for a short time, take those precautions which we shall hereafter recommend. We may truly say that there are few affections which get well so rapidly as secondary symptoms, and yet which, when left to themselves, produce such serious consequences. But too often our prognosis is not of this cheering nature ; the individual we have to treat may be a debauched character, his constitution may be impaired by previous excesses, or by some disease foreign to syphilis. He may also seek medical help only in the latter stages of the complaint, when it has already existed many months, or when it has followed the injudicious use of mercury for primary sores, so that the system is impaired, the bowels disordered, and there is a distaste for the further employment of medicine, or the patient may refuse to submit to any fixed plans of treatment, and show himself determined to pursue his pleasures. In all such cases the prognosis must be unfavourable.

In saying, however, that we may usually promise our patient speedy relief, neither surgeon nor patient should delude himself with the idea that a permanent cure will be effected in all cases, or be surprised if relapses occur. In considering the future, and the probability of

relapses of secondary symptoms, the surgeon should view the complaint as simply a local manifestation of the general contamination of the system, the natural course of which is gradually to wear itself out, provided simple care be taken to avoid those aggravating causes of disease which are known to increase its virulence. Should, however, the health be impaired, or the constitution ruined, or should the climate be unfavourable, the constitutional affection under these circumstances will, instead of being a mild complaint, easily amenable to treatment, assume a form, even in the present day, quite as severe as those epidemics described on the introduction of syphilis into Europe; the only difference being, that these attacks are now combated with proper remedies; formerly, surgeons mistreated them. Syphilis, then, only shares the fate of many other diseases which depend upon poisons introduced into the human system, such as scurvy, hospital gangrene, plague, and small-pox. The method of preventing such diseases now consists in avoidance of the cause, in combating the symptoms as they arise, and in not interfering with the powers of nature, but following in her wake, and enabling the constitution to throw off the poison, and also in allaying the irritation it has created. In some of these complaints the specific poison will only act once on the system; others are characterized by a liability to return, and syphilis is well known to be followed by repeated relapses. Read the accounts of Fernel and Fracastor, Ricord* or Brodie†; all agree in this one fact—namely, that relapses have repeatedly occurred while the patient was under the full influence of mercury, as for instance when he was salivated, and kept spitting one or two pints per diem for three weeks,‡ or in some cases when no mercury at all was given; relapses are acknowledged under both treatments. We may lay it down as a fundamental law of this animal poison, that no medicine, as yet known, will, in certain exceptional constitutions, prevent recurrence of secondary symptoms; nor, until some other mild animal poison (which when introduced, like the vaccine virus, into the system,

* "The prognosis of secondary disease should be exceedingly reserved and guarded, inasmuch as the practitioner can hardly ever calculate upon a complete and lasting cure. The symptoms disappear, but relapse is very common."—"Ricord's Lectures," *Provincial Journal*, vol. vii. p. 444.)

† Brodie acknowledges the frequency of relapses, but attributes them to insufficient doses of mercury, given internally, in broken-down constitutions. "You may often patch up the disease by giving mercury internally; but it will return again and again, and you may cure it at last by a good course of mercurial ointment."
 . . . "You must exhibit it until the sore has healed, and for some time afterwards; and the same plan must be pursued with reference to the secondary symptoms, or they will return."
 . . . "If after the disease appears to be eradicated, the health is broken down, the disease may return at a considerable distance of time."—"Brodie's Clinical Lecture," *Lancet*, vol. i., 1843-4, pp. 676, 78.)

Hennen relates a case of secondary symptoms, in which he says, "We had a remarkable illustration of the fact that they occur after a well-regulated course of mercury, illustrating Mr. Hunter's doctrine, 'that if the disposition of the disease is formed, mercury cannot cure it until it comes into action,' which, in plain language, as Mr. Guthrie has well expressed, means nothing more than that the disease cannot be prevented, in certain constitutions, from running its own course, when it may, at last, be cured."—"Hennen's Military Surgery," page 529.)

‡ "Le bon degré doit être d'une ou deux pintes de salive par vingt-quatre heures. L'évacuation doit être soutenue dans cette force pendant dix-huit ou vingt jours."—(*Gautier Dagoty*. Paris. Fol. 1773, page 15.)

may prevent or modify this most severe scourge) has been discovered, can we expect an effectual prophylactic. The advocates of modern remedies recommend them as curing the disease, but the cases they give only prove that relapses are less common under some than under others. Unfortunately for science, all have not the candour of Brodie,* who acknowledges the inefficacy of our means of curing syphilis. To believe some authors' statements, success with mercury, or iodide of potassium, is invariable, certain, and infallible. Allopathists, water-doctors, and galvanists, all ignore the relapses that follow their special treatment. It is not enough to know that secondary symptoms disappear; what we wish to learn is, the probability or improbability of their return. These are points on which much information is still required. Mercury cures secondary symptoms more quickly than any other remedy, and it seems to prevent relapses more frequently; but it must at the same time be admitted, that relapses will occur, in spite of its administration, however largely given or long continued. In fine, we may always assure our patient that he will be relieved of his secondary symptoms in a few weeks, but he must not be astonished at seeing them recur, notwithstanding all the means we can employ. The action of the remedy is ephemeral in such cases. This is not the fault of the medicine or the surgeon, but depends on the natural effects of syphilis in certain constitutions—a subject it would be well for some of the staunch supporters of the indiscriminate use of mercury to study in the writings of the army surgeons, to whom we are indebted for much valuable information on the natural history of the complaint.

We have already discussed this subject when speaking of the prognosis of induration and bubo, pp. 348 and 387.

I cannot, however, close these observations on the prognosis of secondary symptoms without drawing the attention of my readers to the opinion of M. Ricord on the subject. He says:—"These symptoms are, on the whole, far from being very serious, for they are easily and rapidly curable; but if not very dangerous in themselves, they are very unpleasant, and if we consider that the cause which produces them is indestructible, the prognosis assumes a certain degree of gravity in so far as the future is concerned. We can, of course, control the eruption and the ensuing ulcerations, but we are powerless as regards the diathesis, and the primary infection which has produced them. The opinion which I hold with regard to the persistence of the diathesis when once fairly established, is no doubt very far from advantageous to myself, as bearing upon my worldly interests; but I have hitherto found no reason to change it; and to support opposite views is to give the public very erroneous notions of our science. No doubt it would be more gratifying both for the medical man and his patient, if the former could promise a radical cure by means of the therapeutic agents he employs; but when this kind of deception is indulged in, it comes to pass that patients neglect paying any attention to the manifestations which *must* come sooner or later, and are lulled into a dangerous ignorance and security by the assurance that they are secure as to the future; and many an organ

* Lecture on Syphilis in *Lancet*, Feb. 17th, 1844, pp. 675 and 678.

has been destroyed in this way, from medical aid not being sought in time. When I dismiss my patients, I always tell them that they are under the influence of a syphilitic diathesis, and I recommend them to apply to a medical man *immediately* they perceive anything wrong about their health. I firmly believe that neither the duration of treatment nor its early application will wholly protect from the diathesis ; for I have seen patients who, after an anti-syphilitic course, have remained perfectly well for ten, twenty, thirty,—ay, even forty years, and yet after these intervals have experienced attacks of an unmistakeable nature. Notice carefully that these were not eruptions, sore-throat, &c., which are all early symptoms, but tubercles, osseous affections, splanchnic diseases, &c. Many of these patients had been treated by such men as Cullerier, Alibert, Bielt, Dupuytren, &c. Divers preparations of mercury and of gold have been used to eradicate the disease, but they have failed in destroying the diathesis ; and when this latter has been supposed to be overcome, it was because no distinction had yet been made between the indurated and the ordinary chancre. Of course, I need not repeat that the latter is comparatively harmless as to secondary symptoms. The prognosis as regards these symptoms is also much influenced by the age of the patient ; it is, in general, very serious with young children hereditarily affected, and likewise with pregnant women.

“Scrofula, phthisis, scurvy, the herpetic venom, a chlorotic state, are, one and all, very untoward complications ; they are, in fact, additional enemies, which the medication is expected to combat. As to hygienic circumstances, you will, of course, understand at once that cold weather, dampness, sudden variations of temperature, excesses, debauchery, &c., render the prognosis very unfavourable. The appearance of a renewed set of symptoms where a mercurial treatment had been gone through for similar eruptions is of a very bad omen—first, on account of the relapse, and secondly, because mercury has so impoverishing an influence on the blood.

“I would direct your attention to the fact that the earlier manifestations are always less serious than the subsequent ones ; and that the further we proceed along the links of secondary accidents, the more serious the prognosis becomes. But still when the transitory symptoms come on, they need not be looked upon with very great anxiety, except where no means have been used to arrest them. Iodide of potassium is all-powerful in controlling these affections, and in a very short time too. The particular seat of any syphilitic manifestation may add somewhat to the gravity of the case, particularly as refers to the tertiary forms, and it often happens that they leave after them indelible marks, and great deformity. Important functions may either be altered or entirely abolished by the destruction of certain organs ; thus patients may get afflicted with deafness, dysphonia, aphonia, difficulty of deglutition, of pronunciation, &c. I need not insist any longer upon the prognosis of secondary symptoms ; you see that they are powerfully influenced by a great variety of circumstances.”—(*Lancet*, vol. i. p. 493, 1848.)

I think it necessary somewhat to qualify this strong statement of the incurability or ineradicability of the syphilitic diathesis. Obsti-

nately as it adheres to the constitution, I believe from experience as well as analogy, that it will *wear out*. And I believe quite as firmly that this wearing out may be accelerated and aided by the judicious employment of proper remedies, especially in combating each successive outbreak of the lurking evil.

And further, not every person who suffers from constitutional symptoms thereby proves that he has acquired the diathesis which is ineradicable. For, as has been stated, there are numerous cases where secondary symptoms, once cured, never return, just as there are others where they do return again and again, but with lessening virulence, till they disappear, and a third class where the infection is never eliminated from the system, but is always liable to break out under the least predisposing cause, with nearly all its pristine violence.

I am convinced that this last form of diathesis appears in comparatively few cases. The usual course is for all symptoms to disappear in a few months, never to return again. I have never myself yet met with any single instance in which, after uncomplicated indurated sore, the secondary disease has extended deeper than the skin or mucous membrane. The bones and deeper structures remain perfectly free from disease. There is no loss of nose, no affection of the bones of the palate, or those other catastrophes which used to show how powerless the old remedies were. The few cases that are now seen in private practice of the worst forms of secondary and tertiary symptoms follow only those phagedenic indurated primary sores that we have described at page 326. They will be enlarged upon in their proper place.

TREATMENT.—I need scarcely, I think, at this stage call the attention of the reader to the importance of treatment; all that has preceded is but, as it were, introductory and explanatory of the modern views, bearing on points which must be fully understood before we can do justice to our patients.

History.—When every symptom, primary or secondary, syphilitic or pseudo-syphilitic, used to be indiscriminately treated with mercury, the duty of the surgeon must have been very simple; frictions, or corrosive sublimate taken in large or small doses, and continued for a period varying with the views of the day, were the panaceas for these complaints. If relapses took place, the cause was said to be self-evident—enough mercury had not been given; and the best practitioner was he who poured in the mineral to the greatest extent.

The non-mercurial school followed, who counted by thousands the cures they performed by the "total-abstinence system." Their investigations were principally made among soldiers, who are examined frequently, and in whom primary symptoms are detected early, and treated effectually, in hospitals which are well ventilated and of uniform temperature.

In civil life, however, the same success was not found to attend the non-mercurial treatment. Sir B. Brodie, in *The Lancet* (Feb. 17th, 1844), states, "Sir W. Wynepress, who was surgeon-major to the Coldstream Guards, but has now retired from service, saw a great deal of syphilitic practice, and he told me that he could manage the cases of privates without mercury, but not those of officers." When Mr.

Rose entered into private practice, he thought that he could apply the same rule to his patients which he had carried out among the soldiers ; but he found that he could not, and was compelled, like other surgeons, to give mercury. In cases where he endeavoured to avoid its exhibition, he found that he was continually beset with difficulties." When we find these admissions made by such men as Mr. Rose, we may well be excused from dwelling at great length on the non-mercurial treatment.

Some years ago I saw a good deal of the evil consequences of the non-mercurial treatment, but now we rarely meet in England with cases in which it has been persisted in for any great length of time. I have related at page 352, a case in which the ill-effects of abstaining from mercury were evident ; still, to this school, and to the army surgeons of this country in particular, we must render due justice, for having first called the attention of the profession to the possibility of treating syphilis, primary and secondary, without mercury. But, in admitting this we must likewise state, that the non-mercurial schools have been led into exaggeration. Science, however, is much indebted to them, and their very exaggeration has been perhaps of great use.

This school pointed out most strongly and correctly the consequences of giving mercury indiscriminately ; it showed that nearly all sores would get well without a grain of the mineral. So far they were right, and subsequent experience has indorsed their opinions. It is a pity, however, that they did not carry their investigation further, and point out what forms of primary sores or secondary symptoms were rebellious to the treatment. Failing in this, they failed to convince the profession generally ; for when practitioners, in the absence of any stated rules, abstained indiscriminately from mercury, the results were, of course, unsatisfactory, as mentioned above by Brodie, because the whole truth was not known or stated. The advocates of the non-mercurial system must have known that, under their method of treatment, an induration would remain as such for months—that spots on the body will occasionally do the same, when no mercury is given—that affection of the eye will come on, as well as other complications, which in civil practice no surgeon should risk. I say this must have been known, for we cannot imagine such shrewd observers, with patients almost always under their notice, could be ignorant of the fact. The cases which did produce these results should have been distinguished from those more numerous ones which get well under simple means, but they were not.

It is to be regretted that the discredit thus cast by our predecessors on mercury, our contemporaries are endeavouring to extend to iodide of potassium.

Within the last few years, public attention has been called to the preparations of iodine ; these have been vaunted above measure by some, and considered valueless by others, in the treatment of secondary symptoms. In quoting a few authorities only, my readers will judge of the difference of opinion on its use. The late and much-lamented Dr. Williams, in his "Elements of Medicine," vol. ii. p. 165, in comparing this new mode of treatment with that by mercury, comes to the conclusion that "iodide of potassium must be considered

as infinitely superior to mercury in the cure of this once formidable disease." Sir B. Brodie, in the *Lancet*, vol. i., 1844, p. 678, says, "It is now very much the custom to administer the latter (iodide of potassium) in cases of syphilis. No doubt it is an excellent remedy in some cases, and it comes in to your aid when you have reasons for not giving mercury; but if you ask me whether you can rely upon iodide of potassium as well as upon mercury, I say no. You may remove slight symptoms, by giving it for a time, and severe symptoms, by exhibiting larger doses, but in the latter case, so far as I have seen, it does not make a permanent cure, for the symptoms return again. As a prophylactic, it is not to be compared with mercury."

"I have demonstrated, in the most positive manner, that the iodide of potassium is a remedy which cannot at all be depended upon in the treatment of secondary symptoms; indeed, it seldom succeeds in dissipating them; it nearly always fails, and is as weak as mercury is strong."—"Ricord's Lectures," in *Lancet*, vol. i., p. 65, 1846.)

In the year 1846 I published an article in the *Lancet*, on the employment of iodide of potassium, in which I attempted to lay down more accurate rules for the treatment of secondary symptoms; subsequent experience, however, as will be soon seen, has caused me to modify, in a slight degree, those opinions, as I found that my own opinions, like those of Sir B. Brodie, Dr. Williams, and Ricord, offered too many exceptional cases. In the present chapter I shall state the results of my present experience, based, as it is, on notes of all the cases that have come under my care in private practice, and which, in the majority of cases, a surgeon has the opportunity of watching for a series of years; for, as must be apparent to most of my readers, it is not sufficient for a practitioner to see his patients occasionally during the next few months only; to arrive at any accurate opinion on the true value of remedies, he should have his eye on the cases for a series of years, a thing impossible among hospital patients.

It would be useless to specify or discuss remedies, the employment of which has long since been abandoned. At the present day the remedies for secondary symptoms are nearly confined to the preparations of iodine and mercury. Our most profitable inquiry will be how the surgeon may most judiciously give these.

PREVENTIVE TREATMENT.—Enough has been stated in preceding pages as to the severity of the prognosis of secondary symptoms, to show that we should attempt by all the means in our power to prevent or destroy the chancre, the primary cause, as speedily as possible. Prompt *abortive* treatment, therefore, is the one which should be employed in the manner recommended at p. 304. The prevention of secondary symptoms should be our aim, as we can never be absolutely certain that we have destroyed the syphilitic diathesis when once established. Should, however, all attempts at prevention fail, or should secondary symptoms have already appeared, our first duty is to remove, as far as lies in our power, all the predisposing or aggravating causes of the disease. The consideration of these predisposing causes will much assist us in the treatment.

The body should be protected from changes of temperature by flannel, and the general powers of the system supported by good diet; indeed the surgeon should be careful how he reduces his patient by bleeding for any complication which may occur, or how he employs any depressing agents whatever. In place of depletory or enfeebling treatment let tonics or baths be prescribed, together with a somewhat generous mode of living.

The following case is of a not uncommon type.

The son of a medical man was brought to me (May, 1856), labouring under the following symptoms. He was of a pale lymphatic temperament, with a specific sore throat and enlargement both of the cervical glands and those behind the mastoid process. He had had an indurated sore. He stated that he had contracted syphilis some months ago. The sore became indurated, and five grains of Plummer's pill was taken three times a day, under the advice of a surgeon. As his health failed the mercury was left off, and his father gave him three grains of iodide of potassium with sarsaparilla; but finding that he did not recover, brought him to me. It seemed to me, that the first object should be to build up his health; I gave him cod-liver oil, ten grains of iodide of potassium three times a day in quassia, prescribed warm baths and stout, with poppy-head gargle, and in a few days his health was very much improved, but I told him that mercury would be probably required. This is the kind of case that, when wrongly treated, is followed by the most terrible consequences, as may be seen in reading the old authors.

Great attention should be paid to complications when they exist, and they must be treated on general principles; in fact, secondary symptoms should be reduced to their *simplest expression*, as the French say. Should the complications be very severe, the original disease may be lost sight of for the moment; there is no hurry to treat it, more especially when other and more urgent symptoms exist.

Before commencing the treatment of secondary symptoms, let the young surgeon recollect what has been said under the head of prognosis; the study of that chapter will teach him that his object should be the *modification and mitigation of the symptoms rather than the sudden and complete eradication of the diathesis*.

Bearing this in mind, then, too much should not be attempted at first, but the vital powers of the patient should be husbanded, and the complications treated as they arise. The first thing, in my opinion, is to obtain the free action of the skin; this can generally be done by prescribing warm or vapour baths once or twice a week, taking care that the patient is not exposed to cold immediately after; attention should be paid to the state of the bowels, and gentle purgatives may be occasionally given. I prefer the pil. rhei c. in sufficient doses to produce a gentle aperient effect.

MERCURY.—Without absolutely affirming that sarsaparilla, iodide of potassium, or other remedies will not cure the affection, I may state they have so often disappointed me, that I seldom now recommend them, but at once have recourse to mercury, as being the remedy most certain and efficacious.

In thus speaking of mercury, my opinions by no means stand alone;

others who generally are considered anti-mercurialists, have experienced the same difficulties in treating various forms of secondary symptoms without mercury. Thus Hennen, who treated so many cases without mercury, says, in his "Military Surgery," page 526, "The cutaneous eruptions I would treat at first on the same general principles, but I should not very long postpone the employment of the mildest mercurial alteratives, aided by warm bathing and sudorifics." At page 524, "I entertain no doubt of the utility of mercury, when properly employed as an auxiliary in the treatment of venereal complaints when they become chronic."

Carmichael, who was one of the first to treat syphilis without mercury, gives the following reasons for administering it:—"That form of disease which is characterized by the scaly eruptions psoriasis and lepra, yields with certainty and rapidity to the exhibition of mercury—a proposition which cannot be advanced respecting the other forms of venereal disease."—"Carmichael's Clinical Lectures," p. 14.)

In simple uncomplicated cases, I am not aware of any necessity for a preparatory course of purgatives, alteratives, or diaphoretics, as recommended by some surgeons. The judicious practitioner in the present day had better turn his attention to the indications for employing the well-known remedy, than to seeking out new ones.

In cases presenting any complications, our attention should be directed to them before commencing mercury; if scrofula or phthisis be imminent, mercury may hasten their development; still the surgeon should consider if the effects of mercury or of syphilis be most to be dreaded (see page 354), and treat the one or the other according to circumstances. It is a singular thing also, as noticed above, that it often happens that these are just the cases which improve the most under its use.

Brodie has the following pertinent observations on this subject:—

"First of all, there are persons of a certain delicate constitution, of a scrofulous disposition, and who are disposed to phthisis. You would not give mercury to a man of this kind until you are quite sure that it was absolutely essential; nevertheless, there are persons of a scrofulous tendency who are best treated by this means. If mercury be an evil, syphilis is a still greater one. In scrofulous persons, local diseases are especially developed after the system has been affected by a morbid poison. If they are disposed to phthisis, they will have tubercles in the lungs after scarlatina, measles, and small-pox, and it is just the same after syphilis. You find enlargement of the glands of the neck take place, whenever the system is disturbed by the syphilitic virus, and here mercury is not to be exhibited unless you are sure that it is wanted. But if there be syphilis, it is better to give it than let the disease take its course; it must, however, be administered with great caution, in moderate doses, and the patient carefully watched all the time."—"Brodie's Clinical Lectures," in the *Lancet*, vol. i., 1844, p. 674.)

I should have no hesitation, under similar circumstances, in giving mercury to pregnant women and children; but these special cases will be fully considered under the head of Syphilis in Children. It would

be but a useless repetition to dwell here upon the best mode of administering mercury,—its doses—consequences—or results. These have been fully detailed under the head of Mercurial Treatment of Indurated Chancre, page 352.

Duration of the Course.—I believe that we should continue mercury for six weeks to three months—even six months if it should be required, during which the mouth may be kept slightly affected, provided the health allows us to continue it so long, and no untoward accident happens. The instances of failure depend, in the present day, upon practitioners giving their patients too powerful doses of mercury, salivating them too rapidly, and suspending the mineral too readily. A relapse consequently takes place, and the same results follow, until the surgeon who may be last consulted is unable to say if mercury, cachexia, (as the army surgeons call it), or syphilis, is first to be treated.

We now proceed to speak of the influence of mercury in removing the symptoms, for which it may have been given, and its power in preventing relapses.

Favourable Effects.—The most experienced surgeon is often himself surprised at the almost marvellous rapidity with which symptoms disappear when mercury is properly given. A patient has been getting sometimes better and sometimes worse under other treatment; he takes a few doses of the mineral, and his skin, before of an earthy, unhealthy colour, becomes clear, the eye resumes its brilliancy, the spots vanish, and the stains alone remain, in very old standing cases; the powers of the system rally, and the patient resumes his usual occupation with a vigour to which he has been unused for many a week. In such cases it will be found that the constitution is good, the health has been maintained, and the primary sore has been probably of an indurated character.

Unfavourable Effects.—Cases, however, that are unfitted for mercury, instead of progressing thus favourably, take on a very different train of symptoms, lassitude, dyspepsia, and a chlorotic condition, set in; the spots, instead of amending, begin to discharge, scabs form, which, on being removed, expose ulcers, circular in shape, presenting only a few flabby granulations (if any at all) attended with a serous or reddish offensive ichor: the patient's nights are painful and restless, and the gums bleed on the slightest touch.

The throat becomes sore, sloughs form in it, and the patient is unable to swallow. We cannot say there is salivation, although many of the symptoms are present; but we have a cachectic state which proceeds from bad to worse. It is not quite certain whether Abernethy included these complaints among "*the diseases resembling syphilis*;" but I am induced to believe that one form of that vague denomination consisted in the cases we are now describing.

I have now (1860) under my care a case of this kind in which the most deplorable consequences have followed a long-continued course of mercury, persisted in in spite of the system being much reduced, and unable to endure it. We rarely find in these cases that the previous sore was a mere indurated chancre. It will be almost always found to have been of a phagedenic or gangrenous character. In the severe cases where there has been sloughing phagedena, if unfortunately mer-

cury has been given and has (as it usually does in these cases) disagreed with the patient, the most lamentable consequences will follow. The surgeon is generally called in only when the constitution has received irreparable injury, particularly when the general system has not been supported by the most generous diet.

In the former edition of this book I cited the following case, showing to what length some persons will go in the injudicious employment of mercury.

A female, the mother of several children, presented herself with three circular sores of the size of a shilling on one leg, and five similar ones on the other ; they presented a foul surface covered with sloughs. She stated that a similar sore had existed on the sternum ; her mouth bore traces of salivation which had nearly passed away, and left the gums spongy, the teeth loose, and covered with tartar, and the state of her whole system such as you might expect in scorbutic disease. According to her account, she had never had primary disease, or the usual secondary symptoms ; but her surgeon (a disciple of the Abernethian school) had given her large and repeated doses of mercury, and used black wash for six weeks. Instead of recovering, she had been getting progressively worse, and applied to me, as the gentleman in attendance said she had not taken mercury enough, and was about to increase the dose.

PROBABILITY OF RELAPSES.—I believe that no treatment can guarantee the system in all cases against the recurrence of secondary symptoms. But experience has proved that moderate courses of mercury succeed more frequently than any other.

I may shortly recapitulate the results which I believe we have fairly arrived at as to the special remedy, mercury. It will not, and cannot in all cases, prevent relapses. Secondary symptoms generally disappear under its use. From whatever cause they subside, indeed, they readily re-appear whether mercury has or has not been given, but are still subject to its control. It is certain that mercury given in appropriate doses does no harm. But if long continued in large doses, it may produce much mischief. However beneficial rapid salivation may be in iritis, it is very objectionable in other secondary symptoms : it leaps over the disease, it depresses the powers of the constitution, and often fails in eradicating the complaint. I almost question if the old humoral pathologists were not right in believing that nature attempts to throw off the disease, and that we are called upon only to assist her, by giving tonics, and by slowly, but continuously, exciting the different emunctories. The plan above recommended, if it does not profess to prevent relapses in every case, avoids those dreadful consequences so often met with in the practice of the ultra-mercurial school, and though we see secondary symptoms recurring, they are of a very mild description, and soon yield to simple remedies. We labour at first under one disadvantage—namely, if under our treatment, relapses occur, they do so in a short time. But they assume a mild form ; whereas, after severe courses of the mineral, though many months, or a year, may elapse before secondary symptoms show themselves, their severity makes the patient pay dearly for his temporary immunity, by a long period of imperfect health. According

to F. de Baerensprung, "Mercury does not cure syphilis, but the mercurialism which it induces causes a temporary disappearance of the symptoms of the disease. As long as the action of the mercury lasts, syphilis will remain in a latent state, but will reappear in a form aggravated in proportion to the harm which the mercurial intoxication has inflicted on the constitution."

I consider the question of relapses so important, that I cannot dismiss it without some additional remarks. Since surgeons who give mercury, as well as those who do not, acknowledge that relapses do occur, though in different proportions, I come to consider if the preparation or mode of application is the cause. In a former page I quoted a passage from Sir B. Brodie, in which he goes so far as to say that, "except in the very slightest cases, you really cannot depend upon any mercurial treatment effecting a cure, or even giving a good chance of it, by any other means than inunction." This, coming from such a source, is the more extraordinary, as Sir B. Brodie must see cases every day where mercury, given internally, in many cases relieves, and in other instances cures, secondary symptoms. On the other hand, we need go no further than the able lecture given by Sir Benjamin himself, to obtain evidence that inunction will not prevent their recurrence. Let the reader turn to Abernethy's case, referred to above at page 322; let him look back to the cases cited in former pages, and he will find satisfactory evidence (even if he has not himself often witnessed cases) that no treatment even with inunction, however long continued, will guarantee the patient from a relapse of the disease in certain constitutions. It will be no answer to the plan I have recommended in the course of these and former pages to say, that had I used various other preparations, relapses would not have taken place. I could give extracts from nearly all writers to show that they do occur under every treatment or no treatment; and I have elsewhere shown that a relapse is a natural consequence of syphilis in certain constitutions, do what you will, in our northern climates. I can easily understand, and have occasional evidence of, the effect of chilly climate, bad food, and low temperature in producing secondary symptoms. But because relapses are not frequent in the south, it does not follow that they are present in the north, because *there* we give mercury. The day is, however, passed for the discussion of the non-mercurial doctrines: the surgeon now considers how he may give the mineral with the greatest economy of the constitutional powers, and as the most probable means of guaranteeing the system from relapse. It is upon these two points that I have wished particularly to dwell, believing them to be of paramount importance.

I may add to the remarks made at page 367, on the ill effects of mercury in altering the condition of the blood, the following observations of F. de Baerensprung:—

"This diminution in the red globules of blood is due much more frequently to the insufficiency of their formation than to their destruction by any extraordinary cause. We see a similar cause producing a similar effect in the atrophic form (*forme atrophique*) of the cutaneous desquamation and alopecia, which results from the insufficient

formation of the epidermic cells. It is probable that the blood does not reconstitute itself. The hæmatopoietic organs (lymphatic glands—spleen) seem to be charged with this duty. Hence it is that we notice oligo hæmia (diminution of the globules) in certain affections of the lymphatic system, because the lymphatic corpuscles cease to be regularly produced. Syphilitic chlorosis (and this is the more remarkable) is severe in proportion as the lymphatic glands diseased are more numerous and more engorged."

IODIDE OF POTASSIUM.—Although in the first attacks of secondary symptoms little dependence can be placed on the administration of iodide of potassium, I have found great benefit from it in cases of relapses.* In fact when a patient has taken large doses of mercury for secondary symptoms, and yet relapses occur, I now almost invariably prescribe iodide of potassium with evident benefit, or at least I try it

* A few years ago I drew, by means of the *Lancet*, the attention of the profession to the fact, that iodide of potassium was principally of use in cases in which mercury had been used for the primary symptoms, and yet relapses had occurred, the rapid disappearance of the symptoms frequently following the administration of the salt. It is true that a few months after its use has been discontinued, fresh spots may appear, much slighter than the last, no longer presenting the coppery tint. If we again recur to the iodide, the same success does not attend the second relapse, nor do we find the same rapid disappearance of the symptoms; the system, however, is now in a condition to bear mercury, which may be administered with the best effect.

I should recommend a trial of iodide of potassium in those numerous cases of constitutional disease which come before us among dispensary and gratuitous patients, presenting secondary symptoms in some modified form, where mercury has been given, and salivation produced, and yet the disease has relapsed. Iodide of potassium is particularly advantageous to that large class of individuals in whom dissipation, prolonged courses of mercury, and inattention to the directions of a medical man, may be expected. In private practice, when unable to ascertain the previous course of treatment, or when mercury and the iodide have both been given without any benefit, and my opinion is asked what further remedies are likely to be useful, I usually support the system by improved diet and change of air, and, after a short interval, commence a course of iodide of potassium, combined with tonics, in the form recommended at page 369. In these recommendations I do not stand alone. The late Dr. Williams stated, "The roscola syphilitica annularis usually rapidly declines when treated either by small doses of mercury or by iodide of potassium, but the latter medicine is, from its innocuous properties in all cases, as the effects are equal, to be preferred to the former. There are cases, however, which appear to yield only to the iodide of potassium."—(*Williams's Elements of Medicine*, chap. vii. p. 156.)

"The purpura syphilitica sometimes yields to mercury or to the iodide of potassium. Occasionally these cases are most rebellious to every remedy, whether antiphlogistic or antisiphilitic." . . . "Of all the syphilitic papular eruptions of the skin, the lichen syphiliticus simplex is the most intractable by medicine. The iodide of potassium does not appear to influence this form of disease, and when treated by mercury or by sarsaparilla, separately or together, it often continues many months."—(*Loc. cit.*, p. 155.)

The late Mr. Carmichael, of Dublin, spoke highly of iodide of potassium during the first four or five weeks of the existence of the papular and pustular eruptions; also in the scaly tubercles following phagedæna; like Dr. Williams, he recommended it in certain forms of secondary symptoms, and employed mercury in others.—(*Carmichael's Clinical Lectures*, p. 176.)

Mr. Carmichael's treatment of secondary symptoms is summed up at page 115 of his "Clinical Lectures." During the existence of fever, confinement to the house, the exhibition of antimonials, and such medicines as determine to the skin; abstinence from meat or wine; about the end of the second or third week, decoction of sarsaparilla, conjoined with small doses of tartarized antimony; and when fever has

before again having recourse to mercury. As to the *modus operandi* of this remedy, I must refer my readers to the treatment of tertiary symptoms, in which the doses, various preparations, and counter-indications, are fully dwelt upon, p. 478.

In our definition we stated that the term secondary symptoms was employed to designate the morbid phenomena which appear on the *skin, mucous membrane, eye, &c.* We will now consider each separately.

The researches of modern anatomists have proved beyond a doubt, that there exists a great analogy between the skin and the mucous membrane. Physiologists have likewise established analogy of function between them, and modern surgeons, in a variety of their rhinoplastic operations, have proved on the human body, what was long known to the comparative anatomist, that skin may be, as it were, transformed into mucous membrane, and mucous membrane assume many of the characters of skin. Pathology daily shows that the influence of disease on the skin re-acts on the mucous membrane, as in cases of burns; and on the contrary, that irritation of the mucous membrane re-acts on the skin, as in eruptions following the use of *copaiba, &c.* In fevers, particularly in typhus, the co-existence of the rosy eruption, or of petechiæ, together with the lesions of the mucous membrane, have not escaped notice; and in small-pox it is now well known that the pustules may appear on the mucous membrane, as well as on the skin. This analogy, then, between the diseases of the skin and mucous membrane is in no case more strongly marked than in secondary symptoms; the eruptions may be traced on the penis and on the prepuce, gradually passing one into the other; on the mouth we have often witnessed this transformation, and a good example is to be seen in Plates VII. and VIII.

subsided, hydriodate of potash, in doses of five to eight or ten grains, three times a day. "When the spots have all desquamated, if they should continue to linger long, notwithstanding this treatment, you may give with advantage small doses of mercury in conjunction with sarsaparilla, in place of hydriodate of potash. The preparation or formula I usually prefer is that of Plummer's or the compound calomel pill, of which four or five grains may be given twice or thrice a day. This course I pursue until the eruption has disappeared, the throat is well, and the pains of the joints no longer felt, under confinement to the house in cold or wintry weather; but in summer, or in warm weather, I am not in the habit of exacting strict confinement during the desquamating stage: however, generally speaking, the less the patient exposes himself to our cold, variable climate, during the continuance of the eruption, the more certain will be his recovery; and by attending to this advice, as well as in avoiding the use of mercury until the eruption has desquamated, you take the best measures to secure your patient against iritis, a return of the eruption, or a relapse of the other secondary symptoms attending this form of disease."—(*Loc. cit.*, pp. 115, 116.)

SECTION I.

SECONDARY SYMPTOMS ON THE SKIN AND APPENDAGES.

THE syphilitic affections of the skin are very varied and numerous, yet, by following the classification of our countrymen, Willan and Bateman, a sufficiently succinct description of them can be given to enable the reader readily to distinguish these specific diseases from such as depend upon other causes.

Various as they are, they may all be reduced to one of the following forms.

Exanthematous affections.

Vesicular affections.

Papular affections.

Tubercular affections.

Pustular affections.

Ulcers.

By far the most common and earliest in appearance are the—

EXANTHEMATA.

Even during the existence of the primary symptoms, or some few weeks after their disappearance, and generally in consequence of exposure to some of the predisposing causes mentioned at p. 401, the patient is surprised at observing a larger or smaller portion of the body, most frequently the abdomen or the arms, covered with an exanthematous eruption, which sometimes assumes the form of measles (so general is the affection of the skin); at other times, distinct patches appear, of a more or less circular form. At their commencement these eruptions are of a rosy colour; the surrounding skin is of an unhealthy appearance, of a dusky yellowish hue; on pressure the spots disappear, but return immediately.

The whole surface may be covered at once, or successively: this exanthematous eruption may pervade the abdomen, lower extremities, arms, face, and back. It may disappear from one part and shift to another, or reappear again on the same portions of the body in a few days. These spots, however, soon lose their rosy colour, and daily become more and more dusky, until they assume a coppery hue, which is always best marked in the most dependent parts of the body; this tint seems to arise from something more than simple congestion, as pressure does not remove it.

M. Ricord adds, "This erythematous eruption is generally apyretic, without local heat or itching; but there may, however, be fever, independently of syphilis, and it must then be looked upon as a concomitant phenomenon; the patient may even have bronchitis or coryza upon him at the time, and these would be sufficient to give rise to some feverishness. I insist upon these circumstances, for such secondary eruptions might, by an inexperienced eye, be mistaken for measles or scarlatina. Feverish symptoms are very rare in constitutional syphilis, but I must say I have observed them now and then. The cutaneous phenomena appear sometimes suddenly; at

other times they come on gradually, and take two or three weeks fully to develop themselves. Their duration is quite uncertain—a circumstance in which they differ widely from the regular exanthemata, which last a definite and fixed period of time.

“When the exanthematous eruption has appeared, it will go on for more or less time, but it then presents a kind of intermittent character; it is observed to fade away for a little while, then it reappears, and it may thus go on with interruptions for two, six, or twelve months; but after a year or two it entirely dies away. In half the cases the eruption remains quite unnoticed, and very often fades away without the patient being aware that it ever existed; but some time after—say a year—another and deeper eruption makes its appearance, and here you must be careful not to take this latter eruption for the first manifestation, for you would then fall into the error of believing that you had to do with a tertiary symptom, the secondary having been absent altogether.”—(*Lancet, loc. cit.*)

PATHOLOGICAL ANATOMY.—Secondary symptoms (according to F. de Baerensprung) manifest themselves by circumscribed inflammation of the superficial layer of the corion (the rubeolous and squamous forms). If they last long, they produce hypertrophy more or less marked of the papillæ (the papular form, condylomata), and lastly ulceration having the character of condylomata—that is to say, ulceration, the base of which is formed by the hypertrophied papillæ extending itself more or less deeply, and producing a superficial cicatrix, which but slowly disappears.

DIAGNOSIS.—It should be remembered that there is a form of nettle-rash, the result of taking copaiba, which is often mistaken for this form of secondary symptoms, and gonorrhœa has accordingly been said to occasion secondary symptoms. The diagnosis is generally easy. Thus, in the roseola depending upon copaiba, the symptoms subside as soon as that medicine is left off; great itching likewise attends it. Desquamation of the skin, absence of indurated chancre or bubo, and the presence of enlarged cervical glands, further assist the diagnosis.

In syphilitic exanthemata we find no fever, no itching. The disease does not rapidly disappear; indurated chancre, buboes, and enlarged cervical glands, or some of these symptoms, are also generally present.

Pityriasis.—There is an affection of the skin which is not unfrequently mistaken for an effect of syphilis, and which authors call *pityriasis versicolor*; I will describe an instance which has lately come under my care. A remarkably well-grown young man was sent to me by a London physician, under the idea that his patient was suffering from secondary symptoms, and before prescribing a mercurial course he wished to have my opinion on the case. The patient told me that he had frequently exposed himself to the chances of infection, and had suffered within a twelvemonth from chancre, which had been cured without mercury. Some months previously to consulting me, he had observed the appearances he now complained of, but which had gradually increased, so as to cause him much alarm. He showed me his chest and abdomen, covered with large patches of

copper-coloured stains ; on some parts very minute scales could be observed, unaccompanied by any elevation of the surface ; but on other portions this complaint consisted in simple discoloration, resembling that of boiled ham. All other parts of the body were free from disease, and the general health was excellent. I at once wrote to his medical attendant, to say that the disease was not venereal, but a well-marked instance of pityriasis versicolor, and recommended a local application, consisting of two grains of corrosive sublimate to one ounce of distilled water, to be applied once or twice a day by means of a small sponge and allowed to dry on the skin. The patient called on me soon after, to say that the affection had completely disappeared, but stated that the application had caused some irritation of the skin, and a few pimples of a rosy colour were still visible. I recommended the lotion to be left off, prescribed warm baths, and the patient, whom I have since seen, is quite well.

I could cite other cases, but this one is a good specimen of the kind one sees in practice. I am far from the first that has called the attention of the profession to these instances. Bateman says of this affection, "Great uneasiness, however, is often occasioned by its appearance, since its brown and almost coppery hue frequently suggests, even to medical practitioners, the idea of a syphilitic symptom." Dermatologists have not, however, shown us how to distinguish the two affections. In this case the history or colour afforded no clue : but in my own practice I have always placed the greatest dependence upon the absence of condylomata, psoriasis palmaris, and sore throat ; when these are not present, and the patient is in good health, you may be sure that you have to treat a simple case of pityriasis versicolor, a complaint which is very harmless. It seems to depend upon a fungous growth on the skin.

TREATMENT.—The *general* plan of treating syphilitic exanthemata with mercury has been already sufficiently alluded to ; the *local* treatment may be of the simplest kind, consisting of warm baths taken every other day, and the patient should remain in the bath for twenty minutes. I have seen much relief experienced by taking gelatine baths ; or the water may be made very soft and agreeable to the surface by boiling two quarts of bran in a gallon of water for half an hour, then straining the fluid and adding it to the bath. If the patient cannot procure readily the convenience of baths, he should be advised to sponge his body daily with luke-warm water, and to rub himself well after with a moderately rough towel.

VESICULÆ.

This variety of syphilitic eruption has seldom come under my notice. M. Ricord likewise states it to be of very rare occurrence. It may resemble other vesicular eruptions, such as herpes or eczema, but is more chronic in its progress, and surrounded with a coppery tint, and patches of discoloured skin remain after the absorption of the limpid fluid contained in the vesicles.

DIAGNOSIS.—Frequent mistakes take place in reference to this form of secondary symptoms.

Dr. Lingen of Hereford lately sent a gentleman for my opinion,

who had on his arms a singular vesicular eruption occurring in circles about as large as a shilling. In this case we determined that the eruption was non-specific, and recommended merely general treatment and the discontinuance of all mercurial preparation. The eruption disappeared, and the gentleman has since married without any ill effects.

I have mentioned, at page 257, under the head of Syphilis in Children, a case occurring in a child, which was mistaken for syphilis. I have since seen various other cases, and in these instances the diagnosis has not been so easy; still, when we find eczema in plump, strong children, the unaffected portions of the skin retaining their healthy colour—and, moreover, if vesicles can be distinguished—we may be sure that the disease is eczema and not syphilis, even although the history may present some suspicious circumstances, as for instance, though the colour be of a copper hue, or the nates covered with scales.

Under this head Dr. M'Evers has, I think very properly, classed the case which came on for trial before the Assistant Barristers' Court at Cork (see chapter on Syphilis in Children), in which it was attempted to be shown that a child had infected a nurse with syphilis, and a quack being called in had salivated the family, causing an angry discussion among the medical men at Cork, and giving rise to a variety of opinions on the case. It will be found reported in the second volume of the *Lancet* for 1846.

The TREATMENT will be similar to that of the exanthemata.

PAPULÆ.

Papulæ, like the exanthemata, may appear on the skin without having given rise to any general disturbance of the system: often, however, the general health may be observed to suffer; the face may have presented an unhealthy, pale, or earthy appearance; the eye may have lost its brilliancy, and the patient grows thin: these premonitory symptoms are sooner or later followed by an eruption of papulæ, more or less general; they, however, first usually appear on the abdomen; at the commencement rosy, they gradually assume the coppery hue. On passing the finger over the affected parts, they will be found to present a certain elevation above the surface of the skin, with a sensible hardness, and are grouped in clusters, or disseminated irregularly here and there; it is this form of papulæ which has received the name of

Lichen.—This may exist as a simple disease a long time, or it may disappear, like the exanthemata, or the points of the papulæ may become dry,* and whitish, and the base shrivel. Afterwards, instead of a papule, a surface covered with little thin scales is seen, quite distinct from the adjacent sound skin. These scaly surfaces may be quite separate, or several may coalesce, forming a continuous surface, covered with silvery scales, which are reproduced as soon as they fall away, or are

* "In the study of constitutional syphilis we cannot help remarking that the eruption is generally of a dry nature with good constitutions, and suppurative with bad ones; and that either circumstance has much influence on the form of the eruption."—"Ricord sur le Chancre," p. 437.)

rubbed off. This appearance has given rise to the division *Squamas*, but which we believe to be no other than the drying and exfoliation of the epidermis, and reproduction of little silvery scales on the papules. (See eruptions in Plates VII. and VIII. Fig. 1.)

Those who have specially written on skin diseases, have sometimes rendered more difficult an acknowledged difficult subject; they have attempted to create distinctions between *Lepra* and *Psoriasis*, which, in my opinion, are both terminations of a papular eruption. The *Lichen* above described may become dry at its summit, scales may form, fall off, and be reproduced, and this process may gain the base, and extend itself in an irregular manner, constituting what authors call *Psoriasis*. On the other hand, the base of the papule may become scaly, the centre or apex remaining in a natural condition; the result is, that a circle is formed of these little scales surrounding and surrounded by healthy skin, and as this circle is somewhat prominent, from a slight swelling of the dermis secreting the scales, it has been considered sufficiently individualized to be termed *Lepra*. On the same individual *Lichen*, *Psoriasis*, and *Lepra* may be seen. We may observe that the little white border, described by M. Bielt as characteristic of the syphilitic affection, is often wanting.

This scaly state of the diseased skin is very often exceedingly rebellious, remaining for a long time stationary. The progress of the *circles* deserves, however, particular attention. As they extend at their circumference, the centre heals; thus the circle enlarges until it has reached the size often of a shilling. The regularity of the circle is often interrupted by the fusion of a second one, and thus two become united, forming a figure of 8, or 3, or 5. (See Plate V. Fig. 3.) When they are about to get well, the scales fall off, and, instead of the white scaly surface, the circle is only to be distinguished by the difference in the colour of the skin, which, after a certain time, assumes a healthy aspect. A good idea of this process may be derived from Plates VII. and VIII.

During the progress of this form of disease, the complaint may attack the palms of the hands and the soles of the feet; it is then called

Psoriasis Palmaris.—Effusion of a horny substance takes place immediately beneath the epidermis, a hard corn about the size of a split pea is felt, which presents a copper colour; the thickened cuticle now presents little cracks, and desquamation follows; if the disease is allowed to go unchecked, the delicate and unprotected cutis cracks, crevices form, which become very painful, and considerable irritation follows when any acrid substance comes in contact with them, and they pour out a secretion which forms crusts upon the surface; in fact, the palm of the hand becomes so horny, that the patient is in part prevented from making use of it. This variety is particularly to be noticed in bakers, grocers, masons, &c. There is every reason to consider it a form of psoriasis, which takes on this character from the condition of the epidermis in these situations.

DIAGNOSIS.—It is very difficult sometimes to distinguish syphilitic psoriasis and lepra from that which has no syphilitic taint, as the following case will show.

“A young widow was sent to me by a medical man, who had treated her for some weeks. The head, which had been shaved,

presented several spots of lepra; blotches of a similar character were sprinkled over the back and shoulders, in colour resembling those of syphilis. There was no sore throat, and no condylomata, nor affection of the palms of the hands could be detected; and from her answers to my inquiries, I fully believe she had never had primary symptoms. In the uncertainty of the diagnosis, I took the opinion of several distinguished surgeons, and we agreed that the disease was syphilitic. Mercury was accordingly given; but soon afterwards, common lepra broke out over the body, thus proving the inaccuracy of our diagnosis. The treatment was altered, and the patient slowly recovered.

This case led me to regard the diagnosis of this class of ailments as one of considerable difficulty. The consequences which might have arisen had mercury in this case been given in larger doses would have been so serious, that I determined to trust in future to concomitant symptoms, and from that moment never to characterize a papular eruption as syphilitic, unless it was attended with other well-marked syphilitic symptoms, such as psoriasis palmaris, sore throat, or mucous tubercles.

My faith even in these as diagnostic marks became somewhat shaken, by having to treat a *chef de cuisine* to a nobleman, who, in addition to other suspicious-looking eruptions, presented psoriasis of the hands, which he attributed to employing the palm of the hand in holding various instruments which press on this part, just as the pestle does when used by the chemist. From whatever cause it arose, the patient presented psoriasis not only on the hands, but on the scrotum, and if my recollection serves me, on the tongue likewise. The case to my own mind was very characteristic of syphilis, but, although my patient had exposed himself to infection, yet he never had observed chancre, nor could I trace any cicatrix of any pre-existing disease. As it was his intention to proceed in a few days to Paris, I desired him to consult M. Ricord, who gave it as his opinion that the disease was not syphilitic. Under this advice my patient got no better, and returning to England, rapidly recovered under moderate quantities of blue pill and dilute citrine ointment. I have seen him several times since, and he has had no relapse. In consequence of this difference of opinion, I asked M. Ricord, when lately going round his hospital, to point out the characteristic marks by which he distinguished the simple non-specific form of the affection from syphilitic psoriasis. He replied that in the non-syphilitic affection, the scales are conglomerate, and thicker on the hands, and, when peeled off, the skin underneath is rough and cracked; in the syphilitic affection, if the skin under the scales be stretched, no cracks will be found. He also said he was fully convinced that the non-syphilitic affection occurs sometimes on the scrotum and tongue.

In these puzzling cases the antecedents of the patient may throw light upon the case. The previous existence of indurated chancre, the occurrence of non-suppurating bubo, may assist, but will not always prevent our forming an incorrect opinion. There is no affection about which so much difference of opinion exists. I lately saw a gentleman sent to me from Liverpool, who had been under treatment

by our first surgeons in London with psoriasis of the feet; he had taken tar pills and the usual remedies, but without any good effect; he got rapidly well under small doses of mercury, and has had no return of his complaint. In another instance, a Greek gentleman had a few spots on his body, which nothing removed until he employed fumigation, although he had consulted the most eminent men.

TREATMENT.—The local treatment of these cases should consist at first of warm baths, if any irritation of the skin exists. The chronic nature of the affections, however, usually calls at once for a more active treatment, and the addition of corrosive sublimate, or the sulphuret of potash, to the warm-bath, is attended with the best results. In other instances, the use of tar ointment, composed of tar and lard, is very beneficial. The patient should rub the parts affected daily with the ointment, and his sheets and shirt should not be changed,—he lives thus in a tar atmosphere, and the surface is constantly kept covered with grease; it is a most unpleasant remedy, but I have seen eruptions of simple as well as syphilitic psoriasis yield in a few weeks, which had resisted all other means. It is stated by M. Bielt that such treatment will not prevent a relapse; this I believe, but I think we should nevertheless employ it.

Mercurial fumigations, when properly administered, are sometimes very beneficial. As English practitioners now rarely employ them, a few words on their administration may not be out of place here.

The method of fumigation I described in the former editions of this work was, as I then felt and stated, too cumbrous to be of any very general use. Since then, however, a much-improved plan has been recommended by Messrs. Lee and Pollock, forming a portable and cheap apparatus, capable of effectually fumigating the whole body.

It consists of a kind of tin case, containing a spirit-lamp. In the centre, immediately over the wick of the lamp, is a small circular tin plate, upon which ten or twenty grains of calomel are placed. Around this is a circular depression, which is half filled with boiling water. The patient places this on the ground, and sits over it, or near it, on a small cane stool. He is then enveloped, lamp and all, in a circular Mackintosh, which Messrs. Savigny* have made for the purpose. When a Mackintosh cannot readily be procured, a double blanket answers the purpose very well. At the expiration of a quarter of an hour or twenty minutes, the calomel, the water, and the spirit in the lamp, will have disappeared, and the patient may then get into bed. It is well that a certain portion of the vapour should be inhaled during the bath. This will render the mercurial action more evident upon the patient's gums; but this is not always necessary for the cure of the disease. The length of time that the use of the baths should be continued, is probably about the same as would be required in other forms of mercurial treatment.

The body should be covered with a dark powder when the process has been well applied, and gold leaf will detect the presence of mercury on every part of the body.

I do not think, however, that fumigation will ever supersede the other plans of giving mercury, or that it is unattended with drawbacks.

* Of St. James's-street, who sells these tin cases for fumigating purposes.

In the slighter cases, when only a few spots appear on the body, their disappearance may be readily effected by the employment of ointments. The following is the formula I frequently employ :—

R Hyd. Subsulphat. ℥ss.
 Unguent. Cetacei ʒss.
 M. ft. Unguent.

In employing greasy applications, however, care should be taken to remove by tepid water the stale ointment before any fresh is employed.

The best application I know for the hands is the dilute citrine ointment, which I smear on the spots, and desire the patient to put on an old pair of kid gloves and sleep in them. In some of these cases the internal use of the Liq. Hydriodatis Hydrargyri et Arsenici does good. It should be taken in doses of fifteen drops two or three times a day, and soon after eating, otherwise it is apt to disagree with the stomach.

In cases where we have reason to suspect the affection is rather simple than specific lepra, recourse may be had to Sol. Fowleri, five drops two or three times daily, and the following ointment may be used :—

R Hydrargyri Subsulphat. . . gr. xv.
 Ol. Juniperi Pyroligni . . ʒiiss.
 Adipis ʒj.
 M. ft. Unguent. more dictu utend.

TUBERCULA OR CONDYLOMATA.

The affection called in England Condyloma or Condyломата is another modification of the papular affection. The French call it *Tubercule Muqueux*, *Papules Muqueuses*, or *Pustule Plat.*

This complaint, which we shall call condyloma or mucous tubercle, may commence by slight redness; the epithelium then becomes softened, loses its connexions with the parts beneath, disappears, and leaves an erosion; the eroded surface soon turns very red, projecting and granular, and is covered with a pultaceous secretion, which is generally extremely foetid, particularly in the anal and the genital regions. These mucous tubercles are first composed of isolated papules, which, by uniting into groups, form large patches; they are flattened, irregular, separated by fissures, and their edges are very sharp. Mucous papulæ may become very prominent, and from the state of simple hypertrophy, they often pass into that of vegetations. Their surface in such a case contracts a good deal; little transparent and globular granulations form, they rise by degrees, and in uniting they give origin to a sort of raspberry vegetation. It springs up very easily indeed in those regions where the skin is in the vicinity of mucous membranes, and is not bound down by the epidermis, and likewise where it is bathed with an abundant follicular secretion—as, for instance, at the verge of the anus, the genito-crural fossa, the internal surface of the prepuce, the umbilicus, the lips, the meatus auditorius, the velum pendulum palati, the tonsils, &c. Mucous papules never yield any inoculable pus;* they do not give rise to any neighbouring

* Many persons believe that secondary symptoms and mucous tubercles or condylomata, in particular, are inoculable. The fact, that two parts which come into opposition both present condylomata, has been brought forward to prove this posi-

adenitis; they consist merely of an hypertrophied engorgement of the papillæ of the skin, and are susceptible of cure by a specific treatment; whereas such treatment is found powerless in destroying vegetations, even when the latter are situated on a recent mucous papule. Mercury will, in such a case, contribute to the disappearance of the base; but the vegetation remains unaltered.”—(*Lancet, loc. cit.*)

The reader may form a very clear notion of the affection from the annexed Plate VII. In appearance each tubercle will vary according to its situation; usually it is of a more or less circular form, presenting a somewhat firm tumour, rather elastic than hard, more or less elevated above the surface of the skin. At first it is pale, but, exposed from its situation to friction, it becomes shortly of a vermilion tint; the surface is somewhat similar to that of mucous membrane; it secretes an acrid matter, which causes and maintains great local irritation, and is of a very offensive odour; the epidermis which covers it becomes excoriated, and the tubercle may present the appearance of a blistered surface, as is well shown in the annexed plate. The mucous tubercle may be isolated (as I witnessed lately in a female under Mr. Lawrence's care, who presented one in the axilla), and give the only intimation of secondary symptoms; frequently, however, they occur in groups, and then the secretion of one irritates the other. The plate shows a severe case, but I have witnessed examples in which a large portion of the thighs, as well as the whole external organs of generation, vagina, and neck of the uterus, have been entirely covered with a crop of tubercles, attended with such local irritation and offensive smell that the female was a most disgusting object. In this case, rubbing one part against the other caused pain, but the general health seemed little affected. By inattention to cleanliness this disease has a tendency to extend, but when care is taken to wash the parts and prevent the accumulation of the secretion, the affection will remain stationary. Under proper treatment this disease rapidly gets well. When left to itself it seems to have little tendency towards ulceration. When ulceration does arise, it extends like that following the pustule, in depth rather than in circumference.

The process of cure is somewhat singular. Like lepra, to which it bears a close resemblance, the centre first shows marks of healing; as cicatrization takes place in the centre, the excoriating margin, which is elevated above the surrounding skin, extends until it has assumed the size of a half-crown; and it may then suddenly stop and the circle get rapidly well, but for a long time after a livid purple or coppery-coloured spot remains, and affords the only vestige of the disease; such was the case in the instance above cited. The circles may intersect one another, giving rise to various varieties of cicatrization. (See Plate V. Fig. 3.)

Such is the *course* and *termination* of the mucous tubercle; it,

tion. Of the fact there can be no doubt, it happens in the vulva, scrotum, thighs, &c., but about the explanation we disagree; the same cause which determines condylomata to one side, will do so on the other—namely, heat and moisture; this is increased in proportion as they are formed; and, although one will follow the other, still, very often, they appear at the same time.—W. A.

however, often presents varieties, as we shall now proceed to describe. Instead of beginning as we have just shown, it may arise on any point of the body which has been the seat of chancre, and which is irritated and moistened by the secretions of the parts; we have witnessed such an origin at the base of the penis or the scrotum; M. Ricord calls this a change of *chancre in situ* into the mucous tubercle. It happens, likewise, that a chancre on one part of its surface may be converted into a mucous tubercle, while the other may continue to secrete the virus. Such cases as these have led to the notion that the mucous tubercle is contagious, but, from the experiments of M. Ricord, it is now satisfactorily proved that, unless under these circumstances, mucous tubercles can never be transmitted from one adult to the other, notwithstanding all the attempts that have been made. The chancre, when it has lost its virulent character, and is covered with granulations, may, under particular circumstances, take on the character of the *ulcus elevatum*, as we mentioned in treating of Indurated Chancre, page 336;—it will then be very difficult to distinguish it from an isolated mucous tubercle; but this is of no great importance.*

DIAGNOSIS.—There are various forms of *acne indurata* which have been mistaken for syphilitic tubercular affections. I attended a medical man with *acne*, which nothing could persuade him was of a simple kind, because he had pains in his shins and a slight cold.

I also lately had under my care a gentleman suffering from secondary symptoms whose family was very subject to *acne indurata*. It was impossible to observe any difference in colour between the *acne indurata* (which had existed several years) on the back of this patient, and the specific disease resulting from syphilis. Mercury relieved and cured the recent complaint, but the inveterate disease, *acne*, was not in the least benefited, and he still bears marks of it, although his general health is excellent.

THE TREATMENT OF CONDYLOMATA must be guided by the indications spoken of in preceding sections, and although cleanliness and the internal administration of mercury will often alone suffice, still the following local treatment should be employed. Let the tubercles be bathed twice a day with the following lotion:—

R Liq. Sodæ Chlorinat. ʒij ad ʒss.
 Aquæ ʒviij.
 M. ft. Lot.

Let the parts be well dried, and calomel be sprinkled upon them, and dry lint kept between the excoriated surfaces. In a few days the benefit will become visible, and a cure will take place. The disease represented in Plate VII. was thus cured in fifteen days.

* I believe this transformation *in situ* of the chancre into a mucous tubercle is one of the forms or varieties first described by Evans in his "Practical Remarks on Ulceration of the Genital Organs," under the term *Venerola Vulgaris, aut Ulcus Elevatum*, and more recently by Mr. Skey, in his lectures reported in the *Medical Gazette*. The view of its nature, given above, is very different from that taken by these gentlemen.

PUSTULÆ.

These *pustulæ* are not generally an acute affection of the skin, similar to that of small-pox, attended with full-formed pustules filled with a yellowish fluid. Such cases have rarely come under my notice; but I remember seeing one in the wards of M. Ricord, in 1847. The patient presented an indurated chancre, with a pustular eruption on its decline. Had not the chancre been present, one might have taken it for a case of a man recovering from small-pox. It seemed to me to bear a striking resemblance to those old pictures one sees of leprosy.

Most frequently pustules follow as sequelæ of other eruptions; but bad treatment, want of proper attention to cleanliness, and other causes, may produce them. At a later period, after the occurrence of the primary sores, a yellowish serum, which soon becomes thick and consistent, is seen raising up the epidermis on the centre of the various eruptions previously described; the pustule does not assume the characters seen in the pustule of the drawing of artificial chancre; it is often covered at the commencement with scales, and then appears to be the result of an inflammatory action beneath the spot of lepra. In other instances, it seems developed in a papula, which becomes converted into a organ secreting pus; scabs form upon it, which increase in diameter in consequence of the additional secretion of pus, becoming hard, brown, and surrounded by a livid or copper-coloured areola. These scabs may increase to a considerable size, being at their base as large as a shilling, and projecting above the skin at least half an inch. On removing these masses of scabs superimposed one above the other, and often covering large portions of the body, a dirty, sanious, and ulcerating surface will be observed occupying their base; the edges are often callous, and extend underneath the epidermis; hence the ulceration is larger than at first sight it appears to be. This form of eruption is usually very chronic in its course, and shows little disposition to heal; the ulcerations remain for a long time stationary, or when they show a disposition to heal, cicatrization takes place slowly; a livid condition of the skin succeeds, a material loss of substance is evident, and white cicatrices are the result.

Pearson states, that on the skin of the Negro they leave a whitish appearance.

It is especially under these forms that the general health suffers; the skin is dusky, the countenance is shrunk, the capillary circulation is imperfectly performed, nutrition goes on badly, purpura often supervenes; general prostration of strength, together with loss of appetite, and rheumatic pains occur, indicating that the constitution is suffering severely, and it is not until the health improves that the sores heal. It was probably under such severe forms as these that the epidemic of the fifteenth century showed itself, but at the present time we only see this form of disease in persons of bad constitution, or those who have ruined their health by excesses.

It is to this form of scab that the term *Rupia* has been given, from

a resemblance that has been thought to exist between the crusts it produces and the shells of limpets. (Plate VIII.) There is, however, another form which I have occasionally found arising under similar circumstances ; large *bullæ*, or vesicles, based on an ulcerating surface, and containing at first a thin and serous, and then a sanguineous fluid, of a most fetid nature, are seen on various points of the body ; they form crusts, and follow the same course as the disease last described ; they indicate a more impoverished condition of the system than even the pustular form, and are often attended with serous or sanguineous effusions into the various cavities of the body. They depend upon a second element over and above syphilis—viz., scrofula or the scorbutic diathesis, and the secret of success lies in the proper treatment of the latter affection.

Before quitting the pustular form, we must not omit mentioning a variety which occurs on the scalp, and which we call *impetigo* ; it apparently commences at the bulb of the hair, showing itself by a small pustule ; a crust is formed around the root of the hair, which, as often as rubbed off, is reproduced by a thick viscid secretion matting the surrounding hair together ; this condition of the scalp is usually confined to a few spots, but the whole hair may become affected. The hair of the affected parts loses its lustre, becomes dry, falls off, and the patient may become bald. The glands in the neck may often be sympathetically enlarged, particularly those behind the ears and at the base of the jaw ; it often accompanies the other forms of secondary symptoms.

DIAGNOSIS.—It may appear hardly credible that *small-pox*, at its commencement, may be mistaken for syphilis ; but I can vouch for the authenticity of the following case, which was detailed to me by the patient himself, whom I saw soon after the mistake had occurred.

A gentleman had been ailing for some time. He consulted a medical man, in large practice in a provincial town, for an eruption which had appeared a few days before on his body. Mercury was commenced, under the idea of the affection of the skin being syphilitic ; but, to his great astonishment, the patient was told a few days subsequently, that the disease was *small-pox*. The eruption afterwards covered the whole body.

I was lately asked to see a foreigner, who presented in a most marked degree an instance of the difficulty of arriving at a diagnosis. This gentleman was covered over with phlyctenaceous pustules, each surrounded with a genuine copper-coloured stain ; sycosis existed on the chin, and general ophthalmia, together with severe affection of the iris, and of the sclerotic coat was present.

Two medical men had come to the conclusion that this was a case of syphilis ; and at first sight I believed in the existence of specific disease. But on inquiry, I found that the patient had been reduced by a constitutional disease, and he was then in a very debilitated condition ; he had never had syphilis or gonorrhœa, nor were condylomata, psoriasis palmaris, nor sore throat, present. This I believed to be an instance (of which I have now seen several) of *ecthyma*, with ophthalmia, occurring in a debilitated constitution, and simulating many of the features of syphilis.

Mr. Busk, surgeon to H.M.S. *Dreadnought*, showed me, some years since, a man covered with an eruption produced by eating bad meat; it presented so much the character of syphilis that I firmly believe almost any one would have called it a secondary symptom except those who possess the opportunities that gentleman enjoys of studying anomalous diseases in sailors.

The TREATMENT must be conducted on much the same principles as those we alluded to under the head of papulæ, in addition to these the pustules may be covered with strips of plaster composed of the emplastr. ammoniaci c. hydrargyro; in some instances its effects have been general, curing the disease and producing an effect on the gums after the other preparations have failed; usually, however, the beneficial results to be expected are purely local. When applied in strips on chronic ulcers, or on those papular eruptions which assume a chronic form, such as the *corona veneris* and many others, it removes them, as by a charm, a short time after its employment.

The dilute citrine ointment mentioned at page 445, may be also tried, and frequently does great good.

ULCERS.

Secondary ulcers on the skin are rarely met with, except when occurring as sequelæ of the various eruptions mentioned in preceding pages. Either in consequence of neglect on the part of the patient, or depending on an unhealthy state of constitution, ulceration may come on in a papule, or in a case of rupia, and then extend itself like any other ulcer. These sores may be isolated, or the body may be covered with them. I have seen them as large as a five-shilling piece, in other cases not larger than split peas. Sometimes they are covered with a dry crust, at others they secrete an unhealthy pus. A single ulcer that becomes chronic and obstinate, and will not heal, may be the only secondary symptom present, as in the following case:—

In October, 1856, a stout elderly gentleman sent to me by Dr. Griffith, and who stated that he had been in the navy, consulted me about a sore place on the side of the nose which had resisted all kinds of treatment. There was an irregular warty sort of growth, about the size of a fourpenny piece, which would not entirely heal, in spite of caustics, ointments, &c. At one point of the sore there was an attempt at cicatrization, the rest of it was covered with a sort of crust, and in parts looked like a wart. By the side of the sore was a spot covered with a thin scab, as if the ichorous matter had been glazed over. On the forehead were two or three spots of leprous-looking eruptions, but no other traces of disease. The patient was in good health. He came to me thinking, (in which I agreed with him,) that it must depend upon syphilis, of which he had had an attack in his youth. This spot had existed for some years, but as it did not get much worse or better under ordinary treatment, he had determined to try what mercury would do.

I have seen other cases of the kind, but secondary ulcers arising from syphilis are on the whole of rare occurrence, and it should be remembered, that lupus in its commencement may be mistaken for a secondary syphilitic affection.

DIAGNOSIS.—In most of our London hospitals, we can find cases of unhealthy ulcers on the lower extremities, which are set down as syphilitic, and it is heresy to doubt the correctness of the diagnosis of such sores, which are infallibly treated with mercury.*

It would seem as if hospital surgeons had predetermined that syphilitic ulcers always presented special marks by which they could be known. I have, in my ignorance of these indubitable characteristic symptoms, ventured, at the bed-side of the patient, to ask some of our leading surgeons to point them out to me; and for the purpose of discovering them if possible, I have read the most modern articles on ulcers. They seem to be considered to consist in the circular shape of the sore, its well-defined edges, its perpendicular margin, its depth, the loss of substance (as if a piece of the size of a sixpence and three times the thickness of wash-leather had been punched out), the livid or copper-coloured arcola, and the anæmic and reduced condition of the patient.

When I say that this is almost always the gist of the replies to my inquiries, I give the opinions of a large number of English surgeons, who are deeply convinced of the certainty of these characteristics. The result, however, is only this, that surgeons have for a number of years been taught to believe that these signs betoken that the ulcers are syphilitic, and as these opinions have never been questioned, of course the belief remains. In our large metropolitan hospitals, where mercury is given for most primary and secondary symptoms, students are not likely to see a large number of cases of syphilis treated without mercury; if they did, they would soon see that real *syphilis* does not, in a good constitution, produce *per se* these ulcers, which appear to me to be peculiar to this country, or at least much more common than on the Continent. I believe that true unmixed syphilis hardly ever produces this form of ulceration, which I admit Hunter and Abernethy thought characteristic.† On inquiring what evidence these authors themselves produced, that such sores were syphilitic, I find none except the perfect conviction that they were so. Conviction in science is not enough; I see just as much reason to say they are mercurial as syphilitic; the *post* has been here placed for the *propter*, as too often occurs in medicine.

Admitting that these ulcerations may sometimes follow pure syphilis, they still more frequently follow syphilis treated with mercury; and most frequently of all do they follow syphilis treated injudiciously with mercury in constitutions that have borne and do

* See the case described at page 322.

† Hennen states, at page 518 of his "Military Surgery," "I have not seen a single case of ulceration succeeding a cutaneous eruption in the Military Hospitals since the non-mercurial practice has been adopted, except where mercury had been long and irregularly used. It would appear as if exposure to mercurial vapour has this effect; for Sir W. Burnett, in his account of the effect of mercurial vapour on the crew of the *Triumph* says, 'The *Triumph*, previous to this event (diffusion of crude mercury through the ship) had suffered considerably by having a number of her men attacked with malignant ulcer, which at one time prevailed to a considerable extent in our ships, both at home and abroad, and in many of the men who had so suffered, the ulcers which had long been completely healed without even an erosion of the skin, broke out again, and soon put on a gangrenous appearance.'"—(*Med. Chirurg. Review*, vol. iv. p. 1012.)

bear mercury very badly. If we watch the treatment of these last cases with mercury, we shall find that, though for the first few days they improve, they very soon fall back again.* The mercurial treatment is discontinued or abated, improved diet is ordered, and perhaps sarsaparilla, the patient partially recovers, and then a second edition of the mercurial is prescribed. The result is, that as the patient was a feeble creature before, this state of debility increases, to be followed by a cachectic state, which is too common in the present day. Now this cachectic condition does not depend upon mercury alone; it is the conjoint effect of syphilis, mercury, and debility—call it, if you please, *syphilitic cachexia*.

It deserves, moreover, notice, that no other remedy except mercury meets with a fair trial in the hands of thorough-going mercurial surgeons; any little complication coming on when other preparations are given, causes the remedy, whatever it is, to be abandoned; but if any untoward accident happens during a course of mercury, it is not in fault—it may be suspended, but is returned to.†

To the student I would say, be not biassed by the *ipse dixit* of your teacher. Watch the cases, and see if the opinion here expressed on the treatment by mercury be correct or not; do not look only to the healing of the sore; judge if the constitution of the patient be improved or not. You will probably lose sight of the case on his leaving the hospital, but even before he quits the institution form your own opinion on the effect that mercury has had on the patient, and when you commence practice, act according to your experience. Compare these sores with scrofulous and scorbutic ulcerations, and then tell me if you can distinguish one from another; the diagnosis looks very plausible on paper, but at the bed-side of the patient it will be difficult to make it out.

Even John Pearson admits, that among the pernicious effects of mercury are to be added phagedenic ulceration. "Not only chancre or hubo assumes this appearance and character, but new sores form and soon spread, becoming sloughy and untractable. A person using mercurial ointment for four or five weeks, shall have a sore appearing on the upper part of the thigh, or on the head or neck, and which very often becomes very unmanageable."—"Manuscript Lectures.")

The TREATMENT.—Of late years we have come into possession of

* I meet with a strong corroboration of this opinion in Hennen's "Military Surgery." At page 520, he says, "In common with other physicians I have, however, frequently observed that mercury, like other substances with which we are familiarly acquainted, frequently mitigates in small doses, but without effectually removing many of the symptoms which it has occasioned when very largely used—a property which has often led to serious mistakes, and which must detract considerably from the value of any examples drawn from the cases of those whose constitutions have been constantly charged with the mineral, when such cases are brought forward as unquestionable proofs of its efficacy where syphilis has resisted every other means of cure."

† I have allowed the preceding observations to remain very much as they stood in the original edition, published twenty years ago. They are not so necessary as they were at that period, but even now (1860), I every now and then see cases which show that the old mercury-worship still exists. The general employment of iodide of potash has considerably modified the fearful results which used to be so commonly seen in hospitals, and I hope that these very remarks have had some effect in removing their frequency.

a very valuable adjunct in the treatment of ulcers of this advanced secondary and incipient tertiary form—namely, *Iodine and its preparations*.

When a case of the kind described in this chapter comes under my care, if mercury has been used for the cure of the preceding symptoms, I never now employ it again, without first trying the effect of iodide of potassium, or what is often of still greater efficacy in such cases, the syrup of the iodide of iron given in \mathfrak{zj} . doses three times a day in the bitter infusion mentioned at page 369. Under this general remedy the local symptoms either altogether and permanently disappear, or after rapidly recovering to a certain point, may become stationary, or even after getting quite well, a relapse may occur. In the two latter events, instead of persevering with the syrup, I prescribe a course of iodine, as recommended at page 478.

In the tedious and tiresome cases which a surgeon in large practice must necessarily meet with, the iodide of potassium, the syrup of the iodide of iron and mercury may all be successively necessary. Although in preceding pages I have deprecated the indiscriminate employment of mercury in ulcers of the skin, I am fully convinced that after iodine has been prescribed and its beneficial operation exhausted, the very best effects may result from a mercurial course applied externally in the form of fumigation or mercurial plaster, accompanied by good diet; but in my opinion it is *after* the iodine, and not *before*, and even then with great discrimination, that mercury should be used.

LOCAL TREATMENT.—Sometimes fumigations, as mentioned above, are expedient; at other times the ulcer may be strapped with strips of ammoniacum and mercurial plaster. In some instances the ulcer may be smeared with the unguent. hyd. nit. oxidi spread on lint, the case being very carefully watched meanwhile. Or the sore may be touched with tincture of iodine, while at the same time the system is supported. In some of the worst forms of syphilitic ulcers the local application of solutions of chlorate of potash is found very beneficial.*

In a case I lately saw in consultation we cured the relapses several times in the way above mentioned, but at last could only give the patient relief by prescribing nitric acid internally in 20 minim doses. In this instance the irritability of the ulcers was so great that the patient could only bear water dressing, and later a weak solution of zinc. This patient is by no means out of danger of relapses, I believe in consequence of a constitutional tendency to rheumatism.

These ulcers are the border limit between secondary and tertiary symptoms, partaking somewhat the nature of both, and should be treated accordingly, as one or the other form preponderates. No part of the treatment of syphilis requires more judgment or causes more anxiety to the practitioner, and there is none in which books

* As was stated at page 362, this salt is not very soluble in water, the proportion being only about eighteen grains to the ounce. Lotions made in the latter proportions may be employed. The sore may be touched with the solution, but I prefer placing pieces of lint soaked with the solution and cut to the exact size of the ulcer, in the sore itself, and covering the lint with oil silk.

are more deficient in directions. I need not specify cases, though I have records of several; for I find that they merely exemplify the practical directions given above.

There is a circumstance, however, which private practice has taught me, and it is one that claims attentive consideration. It *may* serve as a diagnostic sign* as to whether these ulcers have a constitutional origin. I have on several occasions attended *brothers* who have suffered from these obstinate ulcers with identically the same symptoms, and yet each individual has lived in different parts of the country and contracted the disease from different women. In one instance the patient contracted the sore in India, yet the secondary symptoms were the same as those in his brother's case, and the after consequences were in both most severe and very similar.

This fact serves moreover to show that there is only one syphilitic poison which acts in a similar manner, and produces similar effects, and that although the treatment employed in the different cases may materially differ. Still in all these cases only one line of treatment leads ultimately to recovery.

Button Scurvy.—I think it not at all improbable that the affection known in Ireland under this name may be nothing but unhealthy granulations springing up on the ulcers above spoken of in persons reduced by disease, bad food, or strumous or scorbutic disease, or on spots left by the falling of crusts of rupia. In London I have occasionally seen effects leading me to take this view. And although I have not been able to examine the affection in Ireland (where by the bye it is not so common as it formerly was), still from drawings of the complaint that have been kindly forwarded to me by Irish surgeons, I fancy the treatment with iodine would prove successful, particularly if seconded by local or general mercurial treatment, change of air, and the best possible diet. I believe this disease in the sister island, is confined pretty much to the poorer classes.

SYPHILITIC DISEASES OF THE SCALP.—ALOPECIA.

The earliest symptoms of syphilitic affections of the scalp consist usually in itching, attended by rheumatic pains, or the patient will complain of several distinct tender patches. On examination, no trace of eruption or affection can be detected, but if the patient has recently (say within six weeks or two months) suffered from chancre, or induration remains in the situation of the sore, the symptoms will not be confined to those above described, but will soon be followed by loss of hair.

Alopecia, as this symptom is called, commences very gradually. At first the hair becomes dry and crisp, loses its glossy appearance, breaks readily, and a surgeon will be told that the brush irritates the head, and that it is impossible to use a comb from the pain it produces. On examining the head, the hairs will in many instances be found broken off close to the scalp, and patches here and there of partial baldness will be seen. In the most advanced stages the hair comes away with the bulbs attached, and in considerable quantities. The

surface of the head is not necessarily scurfy ; and it is only in the latter stages that pityriasis is troublesome. The colour of the scalp now begins to alter ; various points become of a rosy hue, the more apparent, as the surface of the skin generally has a yellowish, unhealthy look. Slight febrile symptoms set in, attended frequently with spots of similar rosy colour on the abdomen. At this period the patient often complains of general rheumatic affection of the joints, with loss of appetite and debility. As stated above, this affection of the scalp usually occurs within six weeks or two months from the occurrence of primary symptoms. This, however, is only true when no mercury, or only a moderate quantity, has been given. I lately saw a gentleman who, four years ago, contracted syphilis, for which he took large quantities of mercury. He recovered slowly, and had no relapse for three years and a half ; when suddenly his hair began to fall off, and secondary symptoms appeared, (as he states) for the first time. In another case the hair became grey in patches of the size of a shilling.

Alopecia, when it exists alone, or only to a slight extent, may, and usually does, depend upon other causes than syphilis. Still the surgeon should bear in mind that it is a frequent sequela of the disease, and requires immediate attention, or the loss of the hair will be considerable, and its re-appearance uncertain. We rarely meet in the present day with those large patches of the scalp completely denuded of hair, or observe the permanent loss of eyebrows or eyelashes, described by the older writers. I, however, witnessed lately such an instance in the wife of a soldier, in whom we were unable to check the disease for some time, aggravated as it was by poverty and destitution.

In private practice patients are very anxious to learn if the hair will grow again ; their fears may be quieted by an assurance, that although the falling of the hair cannot be stopped *at once*, it will be each day lost in less and less quantities, and ultimately will grow as strong as before, provided the case is seen in the early stages of the complaint. It will be some time, however, before the hair will attain its usual gloss ; and females must not expect it to grow rapidly, or ever to attain its former length.

I have been unable to decide upon the greater or less probability of a good head of hair remaining, after loss from its breaking off close to the scalp, or coming away with its bulb. In either case I have succeeded in securing the re-growth of the hair ; and this might be expected, as we find superfluous hairs (removed, together with their bulb, by means of tweezers) will be reproduced : and physiologists believe that the matrix of the hair will reproduce the bulb. Müller states, that in animals (during the casting of their coats) "the bulbs of the old hair become pale ; and by the side of each a small black globular body is formed, which is developed into the new hair. This is a very interesting fact ; the matrix of the new hair is not the old pulp, but seems to be a new sprout, from the productive base of the follicle."

Before quitting the subject of alopecia, I may mention, that if the hair does not fall off at the commencement, we do not find it generally deciduous in the later stages of syphilitic complaints, and severe cases

of secondary symptoms are often unattended with falling of the hair. In the next stage of the disease, a papular affection of the scalp arises, which commences with little rose-coloured elevations of the skin, to which the patient's attention is directed by the itching of the part. These papulæ, called *lichen*, increase in number; those first formed cease to present any elevation, but slight pearly-white scales form on the apex; these fall away, and are replaced by others; the hair becomes scurfy, and these spots, at first of the size of millet seeds, become as large as a fourpenny piece, forming the affection called *lepra*; the whole surface may secrete these scales, or the centre may heal, and the circumference only present the abnormal secretion; this we call *psoriasis*. Usually, however, the scales are thickest in the centre, and, if the entire scale be carefully removed, this little pyramid will be seen composed of a series of superimposed scales, the undermost, in contact with the scalp, presenting a honeycombed appearance; when seen under the microscope, this mass appears to consist of laminae piled one upon another, their edges forming dark lines; there is nothing characteristic in their appearance; the skin, upon which the scale is placed, looks like that of a recently blistered surface, and secretes a very small quantity of thin, pellucid fluid; at other times it is quite dry, and surrounded with a white line caused by the detached healthy cuticle; this, by Bielt, has been considered a diagnostic sign of syphilitic eruptions, but it is not always present, and may be found in common *lepra*.

In particular situations, especially behind the ears, and in the folds of the neck of stout persons, and those inattentive to cleanliness, these spots, instead of becoming scaly, remain moist, and a raised soft papula appears covered with a white, pulpy, tenacious secretion, like wash-leather, the oozing from which excoriates the surrounding parts; this is called *condyloma*, or *mucous tubercle*. Unless means are taken to check the disease, these scaly or tubercular eruptions will continue for an indefinite time, appearing or increasing on one part, as they fall off from another. In some cases, the points of the papulæ of lichen, at an advanced period, become filled with a yellow fluid, which dries up, forming a small crust; this affection is called *impetigo*. Instead of the point of the papula becoming thus affected, a surface as large as a sixpence will be observed, covered with vesicles, the contents of which, at first transparent, become yellow, coalesce, and a scab forms, from under which oozes a serous fluid, and on removing it, the skin is inflamed and excoriated; this disease is called *eczema impetiginodes*. In still more advanced stages, ulceration may occur on these spots, which assumes a very intractable character, forming tertiary symptoms. At this period, tumours as large as horse-beans may be found on the scalp, which at first are unattended with pain or redness; fluctuation may be detected in them, and if punctured, a thin, serous, straw-coloured fluid exudes; if left alone, they become painful and red, ulcerate, and exposure of the bone follows, producing those necrosed skulls to be seen in our museums, and happily seldom met with in practice in the present day.

DIAGNOSIS.—Medical men, who have had large opportunities of

witnessing affections of the skin, agree, that in the infant and child, affections of the scalp are very common, but are seldom met with in the adult. If a child be troubled with any eruption, ten to one the head or scalp is affected in some form or other, but even though an adult's body be covered with eruption, it is very unusual to find any affection of the scalp. So much is this the case, that in treatises on the scalp descriptions of its diseases are confined almost exclusively to those of infancy. This law, true of diseases of the skin generally, does not apply to syphilitic affections of the scalp. We meet with poor little shrivelled children, the offspring of infected mothers, with their bodies covered with scaly eruption, and their nates one mass of ichorous sores, their nostrils stuffed with discharges, and their eyes profusely secreting a thick yellow matter: the scalp, however, is usually free from disease. The adult, on the contrary, is seldom affected with secondary symptoms, without the scalp presenting some variety of syphilitic eruption. These facts, if acknowledged to be true, are of great practical importance in the diagnosis of affections avowedly difficult, and their truth will, I think, be admitted by those conversant with these diseases. The surgeon, however, must not depend upon the appearance of the eruptions on the scalp alone, but be guided by concomitant symptoms.

TREATMENT.—No time should be lost in the local treatment of alopecia. A patient finds much relief from warm baths, particularly when any irritation exists on the scalp. I desire the hair to be cut as short as fashion will allow, but I have never found it necessary to shave the head in the early stages of the complaint; and I question much if this be required even in the more advanced periods, particularly if proper means be employed to check the disease. These consist in the application of stimulating washes or liniments to the scalp. A very simple and elegant one may be made in the following way:—

R Spirit. Rectificati.
Eau de Cologne
Ol. Ricini, āā, ʒss.
M. ft. Lot.

I employ castor oil, on account of its being the only vegetable oil which is soluble in rectified spirit, and the eau de Cologne covers the otherwise nauseous smell of the oil. If a stronger preparation be required, I recommend a very small portion of a mixture consisting of equal parts of honey water* and tincture of cantharides to be rubbed into the roots of the hair for several successive nights. The first effect of this spirit wash will be but slight. In the course, however, of a few days, there will be some redness and irritation, and patients may complain of a feeling as if something were drawn from their heads, and little blisters will be scattered here and there. I need not say the application should be left off before such effects are produced, to be resorted to at intervals as the case may require. Under this local treatment the hair will cease to fall off, and all tendency to pityriasis disappear; the young hair will be seen sprouting freely. The effect of the spirit on the hair will, however, make it dry and

* Honey-water varies much, but like eau de Cologne is a highly perfumed spirit; honey does not enter into its composition.

untidy, particularly as the brush cannot be freely applied, on account of tenderness of the scalp. I have attempted to combine the cantharides with animal and vegetable oils, in which it is readily soluble, but the peculiar odour of the cantharides renders its employment for the toilet-table objectionable. To obviate the unpleasant effects of spirit in drying the hair, some form of pomatum or hair-oil should be freely used.

In the slighter cases of falling of the hair, pomatum containing a small quantity of tincture of cantharides, will answer very well. The following is a very good formula :—

℞ Adipis ʒj.
 Tinct. Cantharidis . . . ʒij.
 Ol. Rorismarini,
 Ol. Lavendulæ, āā gutt. . x.
 Ess. Jasmīni ʒj.
 M. ft. Unguent.
 Sig. Pomade for the hair.

The local treatment of the earlier forms of syphilitic affections of the head—that is to say, lichen, lepra, psoriasis, and impetigo—consists in the frequent use of the warm bath, taking care to soak the head well.

Great benefit will be derived from washing the head once or twice a week with the yolks of two eggs instead of soap. They should be beaten up in a cup into a lather before use. I find this latter not only cleans the hair better than any other substance I am acquainted with, but gives it a softness and polish which it much needs in its morbidly crisp condition.

Under such treatment the scales become loose and detached, the skin assumes a healthy character, and the cephalic pains cease. The spots may be covered night and morning with dilute citrine liniment, made according to the following formula :—

℞ Ol. Olivæ ʒss
 Unguent. Hyd. Nitrāt. . ʒj.
 M. ft. liniment.

I am acquainted with no preparation so efficacious in scaly affections of the scalp. This liniment is most conveniently kept in a well-corked or stoppered bottle.

The general treatment has already been spoken of under the head of secondary symptoms.

ONYCHIA, OR SYPHILITIC AFFECTIONS OF THE NAILS.

These affections are rarely met with in hospitals, and I saw few cases during the time I studied in Paris. In private practice, however, they come rather frequently under notice.

A distinguished physician, who suffered from an affection of the kind, was some time since under my care. I asked him to write a description of his ailment. I need only premise that I can corroborate every statement he makes and coincide in all the views he expresses. His account is as follows :—

"It was in the latter part of August, a few days after the psoriasis palmaris had entirely disappeared, that the affection of the nails first came on. I was still taking the twelfth of a grain of corrosive sublimate three times a day. I had taken it for about six weeks, first with infusion of quassia, more recently with quinine.

"The disease appeared in the nails as a dark red eruption, giving them a speckled appearance very much like that of the palms of the hands when the psoriasis first made its appearance. The eruption was mostly arranged in longitudinal stripes. Some of the stripes did not reach to the lunula, others however extended quite to the cuticle at the root of the nail, and in one or two fingers there was a patch of discoloration which encroached for about the eighth of an inch upon the skin adjoining, or rather covering the root of the nail. Many of the stripes or patches did not reach to the anterior extremity of the nail. On making a slight pressure on the nail, the red discoloration, which was evidently situated in the vascular skin beneath the nail, disappeared; but on observing closely it could be seen that the nail itself was of a rather darker colour over the red patches, having a tint like that of 'whitey-brown' paper. After two or three weeks the nails appeared rather thinner than before, and the parts of the fingers covered by them were rather tender when the nails were moderately pressed upon.

"There was no particular alteration in the above condition of the nails up to the middle of October, when I rubbed in mercurial ointment on account of the iritis. When the salivation came on, the spots on the nails were of a deeper red than before, and a few days afterwards the nails began to desquamate and to split at the seat of the discolorations. In one or two patches the whole thickness of the nail came off, leaving the surface of the skin rather tender, but not moist or raw. More generally, however, an outer layer consisting of rather more than half the thickness of the nail peeled off, leaving a thin layer of nail beneath, and in those places where the discoloured patches reached to the extremity of the nail, it split longitudinally or broke away. The desquamation and splitting of the nail occurred in some places where the nail had appeared healthy as it was pushed or grew forward from the root, but the desquamation always occurred at the situation of the red patches. The nails at this time (December 30) seem to be getting well; they appear everywhere healthy at the roots, and two or three red patches, over which the nail has not desquamated or split, are fading away."

By March, 1853, this patient's nails had resumed their usual appearance. In December, 1854, he suffered from rheumatic inflammation of the eye and syphilitic spots, which disappeared under the use of mercury, but the nails did not again suffer.

I have been enabled to obtain from another physician the following account of his own case on which I was consulted:—

"On the 10th of June, three weeks after rubbing in the ung. hyd., I noticed the nails of several fingers were of a slightly livid colour, and at the same time they felt much drier than usual.

"These symptoms continued more or less distinct till the beginning

of August, when there appeared close to the roots of the nails a whitish spot of an oval shape with well-defined edges.

"The nail at this spot was dry and friable, and it could be easily broken up and removed for about two-thirds of its thickness; what remained below seemed to be healthy. Since the nails began to be affected their growth has been much slower than formerly. The affected nails appear to be harder and drier than the others.

"The tissue lying immediately underneath the nail and connecting the nail to the finger was quite dry like a piece of thin parchment, and it could be easily separated from the nail and the finger also, the attachment of the nail being consequently very much impaired.

"To-day (1st September) I notice the nail of the great toe assuming the same affection.

"If I might hazard an opinion I should say that the matrix of the nail was at fault, and that the affection was caused by want of sufficient animal matter being supplied to the nail."

The patient was able to separate the skin from the nail, beginning at the free edge, down to the root. At the matrix of the nail of the great toe there seemed to be an arrest of development of the nail. A kind of hollow had been formed from the soft, friable, cheesy nail having been picked out. Under a course of nitric acid and quassia (5 weeks) the great toe recovered. The structure of the nails generally became gradually healthy, but cracks remained in them for some time longer.

THE LOCAL TREATMENT of these cases is very simple. I usually employ a solution of corrosive sublimate (beginning with two grains to the \mathfrak{z} j of water, and gradually increasing the proportion as the skin is able to bear it). I paint the matrices of the nails with this, and under this stimulant the healthy structure is regained. I prefer this to tincture of iodine, which causes such discoloration that attention is always called to the condition of the patient's hand.

I need not say that general treatment must be guided by the indications spoken of in preceding pages, to which I need not here revert.

This condition of the nail is very similar to an affection of the hoof in the horse. The healthy structure of the hoof will become friable and quite unable to hold the nails, causing the affection known to veterinary surgeons as "seedy toe." The professors at the Royal Veterinary College tell me the affection in London is very much more common than formerly, but they cannot explain its origin. I have examined the detritus of the hoof under the microscope, but find only diseased structure, no fungus or other extraneous cause.

Whether onychia ever occurs independently of syphilis in the human being I am unable to say. In my experience it has always been a sequela of that affection.

It will often remain after all other symptoms have disappeared. In one case it came on, together with psoriasis, many years after the primary chancre, and lasted six years on and off.

SECTION II.

SECONDARY AFFECTIONS OF MUCOUS MEMBRANES.

EVERY portion of mucous membrane which the eye during life can observe is, like the skin, subject to become the seat of secondary symptoms. Thus, the lips, inside of the cheeks, tongue, fauces, and throat, may furnish the most unequivocal and characteristic evidences of a constitutional affection; as also may the margin of the anus, and the inside of the intestine itself. The lining of the prepuce may likewise give undoubted evidence of the same fact, as seen in Plate VII. The use of the speculum makes us acquainted with the fact, that the vulva, vagina, and neck of the uterus, are, although rarely, the seat of lesions which may with justice be attributed to constitutional syphilis.

Our observations have been made principally on the mucous membrane covering the mouth and throat, the most frequent situation of secondary symptoms, but the remarks will mostly apply equally to other portions of the mucous membranes.

SECONDARY AFFECTIONS OF THE MOUTH AND THROAT.

Some pathologists, and Cruveilhier among the number, have expressed surprise at the tendency of syphilitic disease to break out in the throat; but when the anatomical relations of the throat are considered—when the great number of blood-vessels there met with is borne in mind—when it is remembered that the mouth is supplied with nerves from numerous and different sources—and when we recollect the sympathies existing between the throat and mouth and the various parts of the economy—when we call to mind, likewise, the influence that puberty exercises on the parts contained in the throat, as well as on the genital organs, we cannot be much surprised that in a disease like syphilis, the throat should so often become affected. The throat, from its functions, is frequently exposed to changes of temperature, and first feels the effects of all excesses; these circumstances, however, will be further alluded to in speaking of the various symptoms of the affection.

The ANATOMICAL CHARACTERS of secondary syphilitic affections of the mucous membrane are, generally speaking, very characteristic. A redness appears on the surface, forming an erythema of the mucous membrane, which may, and often does, pass unnoticed, as it is difficult to distinguish it from the natural redness of the part; or the surgeon may suppose that the patient is suffering from common sore throat. The affected parts soon, however, become prominent, and the centre of the red circle becomes pale, extending in size until it attains that of a sixpence. Very often several points take on this character, and coalesce; thus neither the circular nor semicircular appearance persists, but the affected points present an irregular patch of whitened epithelium, which resembles the skin on a washerwoman's hands, or the appearance of the finger which has been covered with a poultice. It

looks very often as if these patches had been whitened by caustic, and is compared by Irish authors to the snail track. A very good specimen of the affection is seen in Plate VIII. Fig. 1.

If any attempt be made to remove this whitened patch, it will be found very adherent to the tissues beneath; and I have never been able to satisfy myself as to its nature—viz. if it be simply the epithelium altered, or if there be a secretion superadded to it. I am inclined to the latter opinion, as the centre of this bleached surface may be raised above the level of the surrounding healthy mucous membrane. In many persons only one of these patches of a circular shape is met with. The circles may intersect each other, so as to form figures of 8. It is only the mucous membrane, here represented between the lines, that is affected, giving the throat the appearance of containing so many semicircular bands of swollen mucous tissue, and this appearance we have in vain sought for in other diseases. These patches are spread in great quantities over the mouth, gums, tongue, pharynx, or uvula. Usually there is a mere redness of the mucous membrane around, but complications may supervene. I have frequently witnessed an erythematous blush surrounding each patch; ulcerations may take place on the whitened surface, in the form of points, which unite, and the entire bleached appearance is destroyed, or only remains at the circumference, in the shape of a greyish fringe. I have often seen these white patches remain in a stationary state during entire months, particularly when the patient is not exposed to cold or damp, and they may even disappear under simple treatment, but such an occurrence is very rare. They usually become, sooner or later, the seat of ulceration, which destroys the surrounding part, and the circumference of the sore extends. At a later period, particularly in bad constitutions, the affection gains in depth, and assumes a dirty unhealthy character; inflammation or gangrene may seize upon it, or if neglected, it may become what I shall hereafter describe as the tertiary form of sore-throat, causing destruction of the deeper tissues, and be attended with loss of the palate, nose, &c.

The tonsils may become so much swollen, that the patient breathes with difficulty, and general fever may exist; this is not a necessary complication however, as the affection is usually chronic, but has a tendency, if neglected, to gain the deeper tissues.

In this and the preceding page I have described the secondary syphilitic affections of the throat as we meet with them in practice, particularly when no mercury, or very little of the mineral, has been prescribed. When mercury has been given in large quantities for the primary symptoms, the affection of the throat often comes on in spite of the treatment, but, instead of putting on the chronic characters above alluded to, the ulcer is red, inflamed, and sloughy; a piece of the tonsil appears to have been punched out, and the ulcers extend rapidly in size and growth. These are the forms that Hunter was most familiar with, and which he has so fully described; this is the form that is not unfrequently accompanied with rupia, and has been preceded by primary phagedenic sores, or in which the cases have been treated with large quantities of mercury. (See Plate VIII. Fig. 2.) See further description of this tertiary sore-throat, page 492.

SITUATION OF THE PATCHES OF ULCERATION.—This subject is not without its interest in several points of view ; most frequently the patches are observed on the amygdalæ, or on the sides of the tongue, or close to the frænum on its under surface ; they are met with, though less frequently, at the corners of the mouth, and they here soon assume the appearance of cracks, which are very characteristic, and become liable to bleed when the mouth is examined. Sometimes they are met with on the dorsum of the tongue, here assuming an elevated character, like the condylomata around the anus. In many instances there is a mere baldness as it were of the tongue, the papillæ being for the time removed in patches as large as a split pea or fourpenny piece. After a time the papillæ again reappear. I have rarely met with this form of disease on the back part of the pharynx ; on the uvula it is so rare that I can recollect but a very few instances, although it may occasionally occur, as I witnessed in a case lately in St. Bartholomew's Hospital. The importance of these observations will appear hereafter, in treating of the other form of syphilitic sore-throat.

CAUSES.—In tracing back the history of patients affected with this disease, it will be found that, in the adult, indurated chancre has preceded or co-exists ; in the infant, on the contrary, a chancre will be rarely discovered as the antecedent, but the mother will be found to bear traces of primary sores, or it will be ascertained that she is suffering under secondary symptoms, which she has transmitted to the infant during utero-gestation.

Usually, however, the indurated chancre seems only to give a predisposition to the affection, or rather to give rise to a state of the constitution which we have called the syphilitic diathesis. To occasion the development of secondary affections of the throat, various exciting agents are necessary ; these seem to consist in exposure to cold, damp, or moisture ; fatigue ; improper or insufficient food ; excesses of all kinds, &c. Every surgeon must be fully aware that a patient who has been the subject of an indurated sore, although he has not taken mercury, or employed any so-called specific remedies, may with proper care escape sore-throat for some months ; but no sooner does he expose himself to any of the exciting causes above spoken of, than he observes these appearances in the mouth and throat.

The consideration of the influence of exciting causes is very important, as explaining some exceptional cases which appear a long period after the chancre. The affection of the throat will usually be found to appear six weeks or two months after the appearance of an indurated chancre. When the chancre has been imperfectly treated with mercury, the interval which elapses may be longer.

Age, profession, and sex will only act as *predisposing causes*, inasmuch as they may induce irritation of the mucous membrane ; thus the child, from the fact of sucking, is greatly predisposed ; persons who use tobacco pipes are very liable to it : for here, as in those who play upon wind-instruments, there is a great call upon the secreting apparatus of the mouth ; and in the treatment of its diseases these points should not be lost sight of.

The **SYMPTOMS** consist at first in slight pain or stiffness, felt during

deglutition ; and frequently, the first intimation the complaint gives of its existence is a difficulty in swallowing hard substances, such as a crust, without suffering ; although to the eye there appears only a slight redness of the fauces. Sooner or later, however, if the disease is not checked, the bleached appearance of the epithelium follows, and it is difficult (if the weather be changeable) to say whether we have to treat a common sore-throat or not, more especially when no concomitant symptoms occur.

The tonsils may enlarge, so as to obstruct the breathing, giving rise to all the symptoms that impediments of free access of air to the lungs usually produce. In other cases, the tonsils are full of cracks or crevices, and every time a patient swallows, intense pain is felt, like that produced by a cutting instrument. The tone of a patient's voice is altered, becoming husky, and when the arytenoid cartilages are attacked, aphonia may be present. It not unfrequently happens that the orifices of the eustachian tubes become affected, and patients complain of pain darting up to the ear, and partial deafness follows. (See page 456.)

CONCOMITANT DISEASES.—The affection I am describing rarely occurs alone. I have already mentioned that an indurated primary sore often exists on the penis, while, at the same time, a condylomatous affection of the scrotum, anus, or genital organs often precedes or accompanies it. A rubeculous eruption is often visible on the abdomen ; on the scalp an impetiginous affection occurs, as in the case mentioned in the last section (p. 436). The hair falls off, having previously become dry ; the glands in the neck are often enlarged ; in fact, all the symptoms described as secondary may be present.

DIAGNOSIS.—When one or more of the white patches, circular in form, or assuming the semicircular character, are seen on an hypertrophied portion of the mucous membrane, unaccompanied with salivation ; when the patient admits having lately had, or still bears traces of, an indurated chancre ; when various well-marked secondary symptoms are evident on the patient ; when these have been but little benefited by care and local applications, or when the cervical glands are affected, few persons will be found who deny that the symptoms are produced by syphilis, and perhaps, with me, they will call the disease a mucous tubercle of the mouth, the consequence of general and constitutional infection.

Were it in all cases as easy a matter to diagnose the affection, the study of the subject and the treatment of the patient would be very easy ; but those who have seen much of these affections of the mouth and throat are fully aware that there are cases which may present many difficulties, and it is to these that I now propose to call the reader's attention.

It is frequently found in practice, that in consequence of some disorder of the stomach, or from the use of mercury, aphthæ or salivation have occurred ; the mouth may thus present an appearance which masks the disease, and the anatomical characters above described furnish no guide, as it is impossible, from the appearance of the mouth alone, to give an opinion ; it is well in such a case to wait a few days, to treat the salivation by a gargle composed of muriatic acid and

infusion of roses, and touch the gums with a small mop made of lint, dipped in the concentrated hydrochloric acid, and to give chlorate of potash in the manner recommended at page 362. This treatment, combined with a gentle aperient every other morning, and a light and nutritious diet, will cure aphthæ and salivation; but the characteristic mucous tubercle will now remain alone, for this local treatment will not remove it, and the diagnosis will become clear.

With regard to the history of the case, considerable difficulties often prevent us from forming a diagnosis; patients, intentionally or through ignorance, or inattention to the previous complaints, state that they have never had chancres, much less indurated primary sores. The absence of chancres should not prevent us from deciding by means of the other symptoms. Let it ever be borne in mind that chancres may heal in a few days, that they may be contracted in other ways than by sexual intercourse, and consequently may exist on any part of the body, as well as on the penis. (See page 294.) The denial of the patient is not a sufficient reason for concluding that chancres have never existed.

Other forms of secondary symptoms are not always present, and in such cases we are deprived of one of the most valuable guides the surgeon can possess. On the other hand, the practitioner should be well convinced that to come to a correct diagnosis on the nature of syphilitic affections of the mouth, the symptoms by which he judges should themselves be correctly diagnosed as syphilitic; he should take care that aphthæ on the mouth be not mistaken for the mucous tubercle; that a sore on the penis should not, without sufficient reason, be considered syphilitic, nor should the chancre have existed many years previous to the appearance of the affection; lastly, if the supposed secondary symptoms are not well marked—viz. if no rubeolous eruption or mucous tubercles about the anus or scrotum be present, a very cautious opinion should be given, for there are two very great errors which surgeons fall into; the one sees syphilis everywhere, the other seems to shut his eyes to symptoms which can be rationally and truly connected with the disease. I trust, however, I have said enough to show the necessity of weighing each symptom, and giving it only its proper value; each individual symptom must be compared with and corrected by the other, and practice will assist us in forming a correct decision.

Among the cases that present difficulties in a diagnostic point of view, we should more especially notice those patches or that bald or whitened condition of the tongue, which persons in large practice must be familiar with in some forms of *indigestion*, and likewise in cases of simple *lepra* and *psoriasis*. That such affections will occur without any syphilitic symptoms having preceded them, there can be no doubt, and the diagnosis will depend generally on the absence of any concomitant symptom of syphilis; but the greatest caution must be used in coming to a conclusion.

Diagnosis of Mercurial Sore Throat.—There is an affection of the throat that comes on either during or after a course of mercury, which may be mistaken for a syphilitic affection. The question obviously arises, whether too much mercury has been given or not

enough. It is most important under these circumstances to form a correct opinion, for we cannot wait for time to clear up the diagnosis. We must take one or other decided course, and for my own part, in the early years of my practice, I found no decision more difficult to make. That I am not the only one who has felt the difficulty the following extracts from the works of John Hunter will demonstrate: He says, page 458, vol. ii., Palmer's edition:—

“Such complaints are more common in the tonsils than in any other part, for we often find that *while a mercurial course is going on*, and the ulcer of the tonsils healing or even healed, they shall swell, become excoriated, and the excoriations shall sometimes spread over the whole palatum molle, which renders the nature of the disease doubtful. I believe these excoriations, as well as such other appearances of disease as come on during the course of mercury are seldom or never venereal.” He recommends mercury to be left off as quickly as possible, and bark to be given.

Again, at page 459, Hunter says, “*We find that new diseases arise from mercury alone.* The tonsils shall swell where no venereal disease has been before.”

“I have seen mercury given in a supposed venereal ulcer of the tonsils produce a mortification of those glands, and the patient has been nearly destroyed.”—(Page 470.)

It is often difficult to distinguish syphilitic sore-throat from inflammation attended with secretion from the glands in and about the tonsils. Pearson observes, “The matter secreted by the tonsils resembles that of the sebaceous glands, and when they become ulcerated, a thick and sebaceous discharge is produced. When they burst, they appear filled with this sebaceous substance, which is sometimes so offensive, that it is scarcely possible to be in the same room with the patient; although, in certain other diseases of the tonsils, the sebaceous matter exhales such an insupportable odour that so taints the breath, that it becomes necessary to extirpate the diseased part.”—(“Manuscript Lectures,” page 62.)

That mercury will produce a soreness of the throat, similar in many respects to the condition of the mucous membrane of the gums, which we notice in salivation, cannot be doubted. The clearest proof is that it will recover under the same treatment. The following case is selected from a considerable number, of which I have records.

In 1856, I saw a patient (a military man), in consultation with Dr. Quain, and we came to the conclusion that, in consequence of an indurated chancre, a course of mercury was necessary. The delicacy of his chest determined us not to give it internally, and he was desired to rub in. Under the use of the frictions everything went on well, although he was obliged to expose himself to all sorts of weathers at the camp, during the winter months. When he had employed friction for about eight or ten weeks, his throat became affected (I may mention, no effect had been produced on his gums), and being somewhat alarmed, he took the opinion of his regimental surgeon. This gentleman's conclusion was, that secondary symptoms had appeared in the throat, and enough mercury had not been given. He accordingly prescribed blue pill, and ordered the frictions to be discontinued. On

hearing this, the patient again consulted Dr. Quain and myself. We agreed that the throat, which was red, swollen, and irritable, presented so many of the appearances which are noticed on the gums after mercury has been given for some time, that instead of continuing the mercurial treatment the patient should discontinue it, at least, for the time. We prescribed in its place iodide of potassium in bitter infusion three times a day, and recommended warm baths, generous diet, and aperient medicine if required. Within a week all the throat symptoms had disappeared, and at the end of a fortnight, the iodide of potassium was gradually left off, the patient feeling and looking stronger than he had done for years. Now, if he had taken mercury internally at the moment that its injurious effects (for I believe that the mercury was the cause of the throat affection), were appearing, with a delicate constitution and a tendency to chest disease, the results would probably have been most deplorable.

Since my attention has been called to these cases, the number has, as it seems to me, increased surprisingly, and I have reason to think that many of the serious consequences which have been attributed to syphilis, have depended upon the continuance of courses of mercury after the system has become unable to bear it, and that throat symptoms are among the indicia which show that mercury is, for the time at least, altogether inappropriate.

But, although at such a stage of the complaint, mercury is very prejudicial, it may be necessary at a later one to return to it, just as it is found necessary when salivation occurs, to discontinue it for a time, and to resume it when that particular ill-effect has been cured or modified. So in the case of sore throat we are generally obliged to resume mercurial treatment whenever relapses take place; but not before we have, as it were, rebuilt the constitution by chlorate of potash, iodide of potassium, good diet, and fresh air. The non-observance of these rules has, I believe, thrown unmerited odium on the use of mercury. Like many other remedies, it should be used, but not abused.

PROGNOSIS.—It may be inferred from the description above given of the course of the disease, that the prognosis is favourable. Provided no excesses are committed, or the patients do not expose themselves to cold or damp, the disease will in most cases, by care and the simplest treatment, gradually subside.

I have frequently seen such cases treated without mercury. But though they become a little better, relapses take place, and ultimately I have found it necessary to have recourse to the mineral before we can effect a permanent cure.

When the last edition of this book was published, I took rather an unfavourable view of the prognosis, but more extended experience has taught me that, if proper precautions be taken, and if the rules laid down at page 455 be followed, these cases of sore throats generally do very well, and the cases in which there is intolerance of mercury, or which do not recover under its influence, occur less and less rarely. Even those interminable cases of bald patches of the tongue, which used to tire out the patience of both surgeon and patient, are, I think, less rebellious to the modern treatment.

TREATMENT.—The first rules to be gathered from a consideration of

the causes, symptoms, and complications of these affections is to withdraw the patient from everything which can be considered an exciting cause; to prescribe a mild but nutritious diet, and to combat any inflammatory symptoms by the usual antiphlogistic means. Having thus paved the way, the surgeon may employ mercury according to the indications stated under the head of Treatment of Secondary Symptoms of the Skin, pages 418 and 352.

In the inflammatory condition of the throat too soothing applications cannot be used, and I know of nothing which gives so much relief as decoction of poppies, used warm and strong; this mucilaginous gargle hangs about the throat and is very soothing. The patient may also be advised to suck constantly delectable jujubes, so as to keep up a constant secretion of saliva, in order to lubricate the throat. In the more chronic cases, the mouth or throat may be gargled with the following:—

R. Acidi Hydrochlorici diluti . . . ʒj.
Decoct. Cinchonæ Corticis . . . ʒiv.

M. ft. Gargarisma.

Or M. Ricord's favourite gargle may be employed:—

R. Infus. Cicutæ . . . ʒvij (ʒij ad ʒviiij).
Hyd. Bichlorid. . . gr. iij.

M. ft. Gargarisma.

Among other local applications, when cracks or crevices exist, I know nothing which in most cases affords such instantaneous relief, as touching the affected parts with nitrate of silver, either in solution or with the solid stick, which, when pointed, enters each crevice. It is however, not infallible, sometimes giving little, and at best only temporary relief.

In the cases mentioned at page 449, the greatest advantage will be derived from iodide of potassium, bitters, good diet, and opium. Such treatment will usually check the complaint, which has a very formidable appearance at first; in these cases syphilis alone is not present, but we have a combination of mercurial disease, *cachexia syphilitica*, and the results of bad management, which require great care; but of all things the surgeon should be careful how he employs mercury rashly, for whatever temporary relief may be given, yet its results may be very serious.

The treatment, however, of these cases, as well as the description of the tertiary sore-throat, will be found fully described in a subsequent section, under the head of Tertiary Affections of Syphilis.

SECONDARY SYPHILITIC AFFECTIONS OF THE ANUS.

In preceding pages we have remarked on the resemblance existing between affections attacking the skin and mucous membranes. The same resemblance is found to exist between the affections at either extremity of the intestinal canal. If we had as many opportunities of examining the rectum as we have the throat, I believe we should often notice similar changes in the mucous membrane in both situations. In March, 1854, I attended a gentleman sent to me by Dr. Routh; this patient had suffered from syphilis some years previously, and at

the time of consulting me was labouring under severe psoriasis of the soles of the feet. The margin of the anus presented a crop of raised condylomata, which discharged an acrid foetid secretion. These growths seemed to extend some way up the rectum; on the tongue there were somewhat similar appearances.

Some years ago, in consultation with Mr. Young, I saw a female suffering acutely from secondary disease of the rectum, extending some way up it, and in this case I have no doubt similar appearances would have been seen in the rectum had the speculum been used, but its employment is very painful, and seldom does good.

The treatment must be the same as if the throat were affected.

SYPHILITIC AFFECTIONS OF THE EAR.

The ear, like any organ of the body, may suffer from the evil influences of the syphilitic virus. Syphilitic disease of the ear is, however, rare, and close observers have not noticed or written upon it. Nevertheless, since it is occasionally met with, I must not omit it from the catalogue of secondary symptoms.

SECONDARY AFFECTIONS OF THE EXTERNAL EAR.

It often happens that, in common with the other parts of the skin, papular affections occur on the external ear, blocking up the orifice of the meatus. In some rare cases condylomata, with all their attendant consequences (see page 432), may appear within the meatus. The treatment is similar to that employed when the mucous papule exists elsewhere, and need not be reiterated here. I have seen these condylomata occur in cases when there was no other skin affection, and it required close inspection to discover their existence. In such cases, fortunately, treatment is generally very successful in removing this cause of deafness, which is only of a temporary kind, and leaves no permanent lesions.

SECONDARY AFFECTIONS OF THE INTERNAL EAR.

I believe that few syphilitic affections of the throat occur without more or less implicating the Eustachian tube, and thus interfering with the hearing. The irritation, inflammation, ulceration, and sloughing which we have seen attend these syphilitic affections of the throat may readily extend up to and implicate the Eustachian tube. That they do so in many cases, I feel confident, but I am not prepared to describe the appearances, having been as yet unable to detect them. Practice teaches us, however, that temporary deafness comes on during the existence of these affections of the throat, and almost invariably disappears as the throat recovers. The same favourable prognosis cannot be given of all syphilitic affections of the organ of hearing. I have been told by aural surgeons of changes which the membrana tympani undergoes in consequence of the deposition of lymph in its substance, and that, as this is again taken up under the influence of the remedies, the patient recovers his hearing. I am in no position to deny this, but cannot but think that these gentlemen, in thus

describing what they could not possibly see, have been imagining that what occurs in the eye must necessarily occur in the ear.

In 1856, Mr. H., a gentleman of clear complexion, but delicate constitution, was sent to me by M. Jacobovics of Vienna, suffering under primary symptoms, for which mercury had been given. He took iron, and remained quite well for several months, when he complained of pain in the head, lowness of spirits, and indigestion, much of which, I believe, arose from hypochondriasis. He went to a water-cure establishment, where his affection was characterized as some complaint of the spine. The treatment there was too severe for him (or at least, he thought so,) and after two days' stay he returned to London, when much to my surprise, a secondary affection of the skin appeared, giving unmistakable indications of constitutional syphilis. He took iodide of potassium with great benefit, and under its influence nearly all the general symptoms vanished. For some time he had been complaining of various sounds in his ears. When he swallowed he heard noises like the cracking of fire or folding of paper. The hearing was imperfect in both ears, but most so in the right. There was some redness of the fauces, but there had not been much visible disease in the throat or mouth at any time. There was some redness of the external ear. Together with this affection, I noticed some persistent leprous spots on the scrotum, so I determined to give him mercury by inunction. I may mention that the wind had been in the east for some six weeks. I confined him as much as I could to the house. He rubbed in fifteen days with every benefit to the skin, but not much to the ear. As the mercury began to affect his digestion, I left it off, and gave him the syrup of the iodide of iron instead, and for a tonic cascarrilla with *sp. am. aromat.* At this period of his complaint, he consulted, at my suggestion, a distinguished aural surgeon, who considered that there was thickening of the meatus, and ordered one leech behind each ear, followed by a blister. He also applied a hydrocyanic lotion to the meatus. I had already given him a gargle.

A voyage to Australia re-established this gentleman's general health, and when I last saw him he had completely recovered his hearing.

SECTION III.

SYPHILITIC AFFECTIONS OF THE EYE.

THE eye, like the skin and throat, may become affected by syphilis in its secondary forms. The importance of the organ, and the rapidity with which the disease can destroy its tissues, are such as to make these formidable affections well worthy of our careful consideration.

SECONDARY SYMPTOMS ON THE EYELIDS.

Among the patients admitted into the London hospitals, covered as they often are with scaly and tubercular eruptions, we may often notice what is remarked by Mr. Lawrence, "that syphilitic eruptions frequently appear on the external surface, and on the ciliary margins of the lids." And we may trace the gradual changes between the

affections of the skin and mucous membranes, corroborating the statements we have made elsewhere, that they are but manifestations of one and the same disease, appearing on tissues which closely resemble one another. In some instances the corners of the eyelid have that cracked, scaly appearance, well delineated, as occurring at the angles of the mouth, in Plate VII.

In other cases a distinct papule, one half like psoriasis, the other similar to mucous tubercle, appears on the ciliary margin. More rarely; we observe a softened condition of the mucous membrane, which is reduced to a sort of pulp, at the same time that the conjunctiva becomes very red and flocculent; one or more small pustules of the size of pins' heads may appear on this softened membrane. This is a form of the disease called by authors *lippitudo*. Pearson in his "Manuscript Lectures" has a chapter on the subject, showing that the affection had not escaped his notice.

I have not seen the bleached excoriated surface on the palpebræ so frequently seen on the mouth and tongue; though analogy would expect us to meet with it. Usually, the symptoms above described do not occur alone. There is more or less redness of the tunics of the eye; there may be œdema or inflammation of the lids, and the body generally bears marks of other syphilitic eruptions, particularly the scaly or tubercular form, together with secondary symptoms on the throat, head, anus, &c.

On the subject of PROGNOSIS, DIAGNOSIS, and TREATMENT, I have nothing to add to that stated at pages 407 and 415; the surgeon must be guided by the indications that have been already fully discussed elsewhere.

The conjunctiva, however, is not the only part of the eye which may become affected. As Dr. Jacob, of Dublin, has well observed, "the inflammation of the eye-ball is one of the forms in which syphilis displays itself. It is generally called syphilitic *iritis*, because the inflammatory changes are more conspicuous in the iris; but the remarkable redness of the sclerotic, the great imperfection of sight from the very commencement, and the subsequent opacities of the membrane of the aqueous humour and crystalline lens prove that all parts of the organ are engaged, and that, therefore, the practitioner should have his attention directed, perhaps, more to the retina than to other structures."

As, however, this secondary symptom is now generally recognised by the term syphilitic iritis, I shall describe the secondary affections of the eye-ball under the term

SYPHILITIC IRITIS.

HISTORY.—If we are to believe that any particular symptom of syphilis began to exist only about the period that we first meet with descriptions of it, we must conclude that syphilitic iritis first appeared about the year 1801, when Schmidt of Vienna* wrote an essay on

* I have, however, found in a very rare book, written in 1773, the following remarks on the subject. The work is entitled, "Exposition Anatomique des Maux Vénériens sur les Parties de l'Homme et de la Femme," par M. Gaultier Dagoty Père. Paris, folio, plates.

the subject.* Since this period few authors on affections of the eye, or venereal diseases, have neglected noticing the complaint, considering it more or less confidently as a syphilitic symptom. I should not dwell upon this fact, did it not serve to explain differences of opinion on the history of venereal diseases, and show how easily so important a symptom as iritis was overlooked just as other symptoms are at the present day. I find that Mr. Lawrence describes a distinct syphilitic affection of the eye. Mr. Tyrrell speaks simply of iritis, although he admits "that a specific taint, by its influence upon the system, no doubt, in many cases, modifies the local disease."

Mr. Bacot seems to have no doubt that syphilitic iritis is a consequence of general contamination of the system. Sir Astley Cooper states, however, at page 299 of his Lectures, "I have, I must say, considerable doubt on the subject, for I have never met with a person labouring at the same time under any other secondary symptoms of syphilis, with eruptions or nodes on the bones."

Mr. Carmichael likewise admits a *venereal* iritis, although he says it is difficult to distinguish it from the other forms, except by the presence of some other venereal symptoms.

My own opinion has been greatly modified since commencing practice in England. During the period I carried on my investigations on venereal diseases in Paris, although my opportunities of seeing disease were perhaps unequalled, I witnessed so few cases of iritis, compared to the great number of syphilitic complaints, that I was almost induced to deny any relation between them.† At an early period of my studies I should have corroborated the statement of Sir A. Cooper, and I believed that the few cases which I witnessed were mere coincidences, so slight were the secondary symptoms which attended the complaints. It was indeed my intention at one time to exclude syphilitic iritis from this treatise, so unsatisfactory were its diagnostic signs. I could not even go so far as Mr. Tyrrell, and believe that "a specific taint, by its influence on the system, no doubt, in many cases

The author says, page 9, "It happens that persons become blind, not by an obstruction of the optic nerves, as in cases of the Goutte seroine, but by a thickening of the vitreous and crystalline humours, which lose their transparency, preventing the rays of light from falling upon the retina. The salt and acid nature of the virus is very fit to produce this effect upon the humour which it coagulates. We observe an infinity of concretions of the aqueous humours, which seem to form cataracts, and, which moving about in this humour, cause objects to appear as if pierced, like a spider's web, or as little flies; this is occasioned by a relaxation of the glands, which allows these lymphatic concretions, thickened by the virus, to pass into the body of the humour, thus confirming my hypothesis. It seldom happens that a person recovers from these affections by means of the sovereign remedies (*les grands remèdes*).‡ However, patients are met with who do recover sufficiently well to find their way about, read and write, which they cannot, however, do previous to submitting to these sovereign remedies."

* Nachstaar und Iritis Nachstaar Operationen, 4to.

† This probably depended upon eye cases being sent to special hospitals; at least such is the present opinion of M. Ricord. I still think, however, that iritis is much more common in London than Paris.

‡ *Grands remèdes* meant, in 1773, the employment of frictions until a patient spat one or two pints of saliva in twenty-four hours, and the salivation was to be kept up eighteen or twenty days.—(*Loc. cit.*, page 15.)

modifies the local disease." But on my return to London, I had not long witnessed the severe cases to be met with weekly in St. Bartholomew's and other London hospitals, before I began to see the correctness of Mr. Lawrence's description, as given in his valuable work on "Venereal Diseases of the Eye." I was, however, unable to agree with him in always diagnosing this affection from that which is the consequence of rheumatism or gout, by the symptoms which, as I shall presently show, are not always to be met with.*

SYMPTOMS OF SYPHILITIC IRITIS.—In such a treatise as this we cannot dwell at any great length on the various symptoms of iritis. I must refer such of my readers as would require a knowledge of them to the modern treatises on affections of the eye. For my object, a more cursory enumeration will be sufficient.

The syphilitic affection of the iris may be ushered in by considerable constitutional disturbance, headache, inability to sleep from constant pain over the brow, which is aggravated towards evening; but, as Mr. Lawrence observes, even in acute cases such symptoms may exist only in a slight degree, or are entirely wanting.

Mr. Tyrrell lays great stress, and I think deservedly, on the state of the general health and constitution; in nearly all the cases that have come under my notice, the powers of the system have been depressed by bad treatment, insufficient food, exposure to all the inclemencies of the weather, frequent attacks of syphilis, excesses of various kinds, and, lastly, severe depletory measures; even in cases where these circumstances have not been so very apparent, the result has shown that the power of the pulse was usually deceptive, and the disease is rarely accompanied with evident inflammation. When blood is, or rather was (for now bleeding is seldom resorted to) drawn from the arm, it does not present a firm coagulum, but is sizzly, dark-coloured, and contains more than its average quantity of serum. The skin is dusky or cadaverous, and often covered with eruptions, as I shall have again occasion to notice.

The eye is usually very intolerant of light, though in some cases it may be little affected. There is generally some external redness of the eye, in the form of a red zone round the cornea, as may be very well seen in Mr. Tyrrell's treatise, Plate III. Fig. 1.

"The iris," says Mr. Lawrence, "becomes changed in colour; a light-coloured iris assumes a yellowish or greenish tint; occasionally it is distinctly yellow; and if the eye be blue, a bright green is sometimes seen. Generally, however, the tint, whether yellow or green, is of a dull, muddy cast, and darker than in the sound state." When the iris is naturally dark-coloured, it presents, when inflamed, a reddish tinge. Its natural brilliancy disappears, and its beautiful fibrous arrangement is lost, absorbing the rays of light instead of reflecting them, as Mr. Tyrrell observes. The colour of the iris is not only thus altered in consequence of the effusion of lymph into its interstices, but it becomes thickened and fringed. Coagulable lymph

* The correctness of this is now (1860) pretty generally admitted, and ophthalmic surgeons are gradually giving up the notion that local differences distinguish the different forms of iritis.

is likewise effused in distinct globules or masses, usually presenting a reddish colour on the surface or margin of the iris, which appearance has been compared by Beer to condylomata. There is, at the same time, partial closure of the pupil, or adhesions of the iris may occur, and the pupil be drawn in a variety of directions; but none of these changes are peculiar to syphilitic iritis. Vision is of course impaired in various degrees.

Some few years since, M. Ricord gave a lecture, in which he stated that the eyeball may become implicated in various ways, and that the affection of the iris will differ according to the stage of the diathesis, as evidenced by the other symptoms which are present on the skin. He says:—

“In order to be convinced that there is such a thing as iritis of a purely syphilitic nature, it will be sufficient to watch the evolution of secondary symptoms, and to notice the close relation they bear to the different forms of iritis. The lesions which the iris presents are but the repetitions of the cutaneous lesions; for iritis may be either *exanthematous*, *papular*, *vesico-pustular*, or *tubercular*, &c.

“*Exanthematous Inflammation or Roseola*.—The syphilitic affection of the iris often occurs at a very early period of the secondary manifestations, and its outset is marked by inflammatory phenomena. The vessels of the part become congested, and the colour changes. A blue iris becomes green, and a black one turns of a fawn colour; a vascular areola forms under the conjunctiva—its nature may be distinguished by its deep situation and its radiated form; this is, in fact, the *exanthematous form or roseola* attacking the iris. Lesions of sensibility may, in this early stage, already be noticed; there is, namely, headache and photophobia, but these affections are much milder than in unspecific iritis. They may even be entirely absent, and the affection then assumes a chronic form. It has even happened that the inflammation which characterizes the outset of the disease depended on a complication, arising from a cause entirely independent of syphilis.

“The symptoms, in most patients, become aggravated during the night, through an increase of the inflammation. Photophobia comes on, and if the iritis is allowed to progress unchecked, certain modifications arise both in the sensibility and in the different lesions which have already taken place. The dimensions of the pupil and its shape are altered, the first is contracted by an increase of sensibility; the second is changed owing to an alteration of texture. The figure, however, of the pupil is still regular; it is merely contracted by reason of an alteration in its vitality, principally caused by an affection of the ciliary nerves.

“Mydriasis, or Anæsthesia of the Iris occurs very rarely in this disease; but the change of shape may persist, and the iris retain its faculty of dilatation and contraction only on certain points of its surface.

“*Papular Form*.—In this variety the margins of the iris may become angular and irregular, on account of an effusion of plastic lymph, which then takes place. Notice here the analogy between these

phenomena and the formation of a papule on a cutaneous surface. Some German oculists, among whom I must mention Beer, maintain that an elliptical form of the pupil is a pathognomonic sign of the syphilitic nature of the affection. They suppose that in rheumatic iritis the longer axis of the ellipse is horizontal, but perpendicular in syphilitic iritis; and that just as the syphilitic or rheumatic elements are combined in a varying proportion, so does the greater axis of the ellipse alter in its direction. But the alteration in the shape of pupil is caused by lesions which may settle on any part of the iris; and this fact is sufficient to show that there cannot be anything decidedly characteristic in any particular change of shape. The surface of the iris sometimes secretes a plastic fluid analogous to the epidermoid secretion of the skin, which fluid is effused into the aqueous humour of the eye, and renders it dim; the iris, at the same time, mostly forms adhesions with the lens.

"Pustular Form."—If the individual affected with iritis has a pyogenic tendency—if he has been a long time labouring under the syphilitic diathesis, the disease becomes more serious; the iris swells, projects either forwards or backwards, and its surface gets studded with those tumefied points which have by some been called condylomata. With pyogenic individuals these prominences increase in volume, and at last suppurate. Here we have, then, a true pustule, which is perfectly analogous to the pustular syphilitic eruption on the skin. These pustules may be as many as three in number; they may terminate either by resolution, ulceration, or purulent effusion;* if by the latter, hypopyon is the result, and if ulceration takes place, it may destroy the iris. When the latter has passed into this tumefied state, the margins of the pupil become very irregular and fretted, adhesions with the capsule of the lens take place, the cornea and chambers of the eye lose their relative situation, and the axis of vision is destroyed. You see, then, that the lesions which we observe in syphilitic iritis are very similar to those which we find in common iritis; there is indeed much analogy in the symptoms, but the previous history of your patient must partly guide you, and it is useful to observe, moreover, that syphilitic iritis is an apyretic affection, and is rarely followed by sympathetic symptoms in the economy. Yet with respect to the latter, I must say that I have seen patients evidently labouring under a secondary affection of the eye, suffer from fever and vomiting."—(*Lancet*, vol. i, 1848, p. 492.)

* This is happily a very uncommon termination of the affection. During the summer of 1850 I had an opportunity of witnessing a case of the kind in consultation with Mr. Lawrence. A Greek gentleman, of a leuco-phlegmatic constitution, contracted indurated chancre, mercury was given, ecthymatous pustules broke out over the body, and the posterior chamber of the eye became affected, lymph was rapidly thrown out, and on the third day from the commencement of the attack in the eye, the patient was unable to distinguish anything; the most active treatment was had recourse to, but hypopyon followed. Fortunately the eye was saved, but sight was never regained, and Mr. Lawrence stated that he has never seen the eyesight recovered in these severe cases. I may mention, that in looking back at the severe affections of the eye I have since treated, I think that the distressing consequences attending this particular case might perhaps have been avoided had I sooner and more effectually supported the system by tonics, a practice I now (1860) invariably follow.

Syphilitic iritis may occur at any period of life ; Mr. Lawrence mentions two cases in children : in one, the child was only eighteen months old.

But the disease is most frequently seen during the middle period of life, as persons are most liable to syphilis at this age.

In analysing the cases which Mr. Lawrence has reported, I find that seventeen occurred in men, and thirteen in women. This proportion of females is large, considering the comparative numbers of males and females who are labouring under secondary symptoms, for ten men apply at hospitals for one female. This greater frequency in the female I must attribute to her greater exposure to the exciting causes—a subject I shall presently allude to.

One man out of the seventeen had arrived at the age of fifty-three years. Of the thirteen females, two are stated to have been thirty-five years of age, and one to have arrived at forty-five.

It is remarkable, in these cases, to find so great a proportion of cases of syphilitic iritis among persons of advanced life. Syphilitic affections are rare at this period compared with the earlier ones, and yet no less than four cases out of thirty occurred in persons advanced in age. This corroborates an observation I have myself made, that, *cæteris paribus*, iritis is more frequent at the later periods of life, and the advanced stages of secondary symptoms. Mr. Lawrence's thirty cases further prove that syphilitic iritis occurred twelve times in persons of good or moderate constitution, and five times in cases of an opposite nature. In the thirteen other instances, no notice is taken of the condition of the patient, but it may be inferred from statements made in the course of treatment that the constitution was greatly impaired. This, again, agrees with an opinion I have above advanced, which I find coincides with the statements of Mr. Tyrrell.

CAUSES.—In the preceding paragraphs I have traced the cause to constitutional infection, in common with other syphilitic secondary symptoms, therefore it is not my object here to discuss this cause ; but as every case of secondary symptoms is not accompanied with iritis, it is necessary for us to study the exciting causes, as a knowledge of them may lead to the prevention of the complaint.

Exciting Causes.—I have been able to gain very little information on this point by consulting authors ; I must, therefore, depend upon my own observations. I have already mentioned that the disease is rarely met with in Paris, compared to London ; of this fact I have no doubt ; but of its explanation I am not so certain. I believe it to depend a good deal upon the following circumstances : the French prostitute, from the strict vigilance of the police, rarely suffers under any severe form of secondary symptoms ; in her case primary symptoms are instantly attended to, and should secondary affections supervene, measures are at once taken to check their progress.

Why iritis is rarely met with among the male population of Paris, I was some time in discovering. I have however come to the following conclusion. Patients, or at least the majority I have seen in

London, belong to one or other of the following classes : some appertain to the poor, half-starved, emaciated Spitalfields weavers, who have no creature comforts, are ill fed, badly clothed, and worse lodged, upon whom disease has a greater hold than upon the well-fed mechanic. Others belong to the class of draymen, brewers, &c., who are addicted to drinking large quantities of porter or gin ; they are bloated and unhealthy, and furnish a large number of those afflicted with severe syphilitic affections. The climate of England also seriously predisposes to rheumatic affections.

In Paris the two classes above mentioned can hardly be said to exist. Neither gin nor porter is indulged in at Paris by the lower classes, and hence, in that capital, we do not witness those deplorable pictures of penury, gin-drinking, and dissipated habits, to be met with at each step in our London hospitals. And of the difference between the two climates I need hardly speak.

I have been surprised in my own practice to observe how many cases of iritis have occurred among those who have taken mercury largely. After a patient has taken mercury for a long period, so that the mouth has become sore, or when the patient is recovering from the effects of salivation, exposure to cold or taxing the sight in some unusual way will bring on iritis. This has happened now so many times that I have sometimes been almost induced to think that a course of mercury predisposes to the affection of the eye.

I have made inquiries of most of our leading ophthalmic surgeons on the subject, and though none have been able to give any reason to account for the phenomenon, they all agree with me as to the facts. Of late years, however, I have seen reason to believe that this complication of iritis and salivation depends upon a rheumatic diathesis. In fact, it is not only syphilis we have to treat, or the effects of mercury, but some arthritic complication. It may be that the mercury renders the system more susceptible to the rheumatic diathesis, though the disease will come on without a grain having been given.* At any rate, the influence of mercury even carried to salivation will not prevent iritis coming on should the other exciting causes come into operation.

I am inclined, on the whole, to attribute the exciting causes of iritis to exposure, when the system is depressed or over-excited by want, cold, damp, or dram-drinking ; for it is in such cases that we witness the most formidable instances of iritis.

In most cases there exists an assignable cause for the affection of the iris, independent of the syphilitic infection.

* There is a vague but very general notion among patients, that great care must be taken during a course of mercury to avoid evil consequences. The modern system, of letting patients follow their usual avocations while taking the mineral has, to a certain extent, removed the idea that something dreadful would happen should a patient catch cold. With the exception of these cases of iritis coming on during, or in spite of, a course of mercury, I know of no constitutional disturbance bearing out the popular opinion. And even in this particular instance I cannot always discover that merely ordinary exposure has given rise to the complication. I should not recommend a patient to expose his eyes to strong sunlight or an easterly wind when taking mercury, but I believe it requires a strong rheumatic predisposition in order to contract this affection of the eye when taking mercury.

The PROGNOSIS may, generally speaking, be considered favourable, but must always depend upon a variety of circumstances. And this brings me to speak of the distinctions alluded to by M. Ricord. It is by no means an indifferent matter whether there is a mere blush of redness amounting to rubeola, or a vesicle, or a pustule, or a condylomatous mass which forms on or around the iris ; and as we generally find these different depositions answering to similar ones on the skin, our prognosis must vary considerably. I lately saw a gentleman who had been sent me from Brighton, suffering from a rubeolous syphilitic eruption on his body. As a slight redness and great sensibility to light were the only symptoms affecting the eye, a mild treatment was all that was requisite. But a very different course was required for another who had the iris blocked up with organized lymph.

When the case is seen in the early stages, and when the constitution is good, a favourable result may be always anticipated ; but when the disease has been left unchecked, or has become chronic in consequence of ill-directed treatment, or the lymph effused has become organized, or the constitution very much reduced, the surgeon should not judge too favourably of the case. Still, even here much may be done, although too often the patient escapes with an impaired organ and feeble vision.

DIAGNOSIS.—I need not here enumerate all the diseases with which iritis may be confounded, or specify the various means which we must employ to distinguish syphilitic iritis from the other forms of the same disease ; I shall only mention those which will most materially assist the student, as the greater number of diagnostic symptoms that have been relied upon are now found to be useless.

The *History* of the case alone may mislead the surgeon unless he is very cautious ; yet, with proper care, it is the diagnostic sign that I find it safest, on the whole, to be guided by.

When a patient has had syphilis, it does not follow, as some believe, that every attack of iritis he afterwards suffers from depends upon the specific disease ; for, as I have had previously occasion to observe, the length of time between the attack of syphilis and the iritis of which it is the cause is not indefinite, though it will often be modified by the treatment which has been had recourse to. Usually, when mercury has not been employed, the patient who labours under syphilitic iritis will tell you that three months after a primary indurated sore, eruptions appeared on various parts of the body, which continued, and some weeks later iritis followed. When mercury has been used, the secondary symptoms occur late, and so does the iritis ; but even here a twelvemonth seldom passes between the chancre which has preceded, and the iritis which is a consequence of it.

Under the head of history I may mention the other co-existent symptoms. Thinking that statistics may, in a case like this, be useful, I have analysed Mr. Lawrence's thirty cases. I find that in

Nineteen male patients iritis was accompanied—four times by a papular eruption ; once by sore-throat ; seven times by a scaly tubercular eruption ; by no symptoms in three cases ; no notice is taken of an eruption in one case ; in three cases, eruptions not specified are said to have occurred.

In the eleven females the iritis was complicated—twice with the papular eruption; twice with sore throat; three-times with a scaly eruption; with the pustular once; condylomata were present in three cases; one case presented no other secondary symptom; the periosteum was affected in one case; in the remaining one there was a primary sore.

In forming a diagnosis, then, these thirty cases lead to the conclusion that great stress should be placed upon the co-existent secondary symptoms, and my own experience is, that, next to the history, they are the safest guides in the diagnosis.

The difference of opinion that may exist on these complications is well exemplified in Dr. Jacob's treatise on the eye. He says, "In my own practice, I think I may safely say that I more frequently meet with the disease, unaccompanied by any eruptions, or sore-throat, than otherwise. A patient labouring under eruptions or sore-throat, if attacked with inflammation of the eye, will go to the practitioner most celebrated for the treatment of syphilis, because he naturally suspects that his symptoms are owing to that disease. Hence, then, he sees most of his cases with eruptions or sore-throat, while the oculist sees most without them."

Ophthalmic surgeons are now convinced that the colour of the lymph, the direction of the adhesion of the pupil, &c., are signs common to all forms of iritis. When, then, iritis depends upon syphilis, it rarely occurs as a sole symptom; in fact, so rarely, that it becomes a question if in such a case the surgeon is treating syphilitic iritis at all.

The above statistics prove most conclusively, that iritis usually occurs along with a peculiar train of secondary symptoms, usually with the scaly, tubercular, or papular eruptions. Mr. Lawrence mentions having met with one case accompanied by a pustular disease, resembling scabies purulenta; but at page 231 he states, "there exist likewise copper-coloured scaly blotches." It is curious that ulceration of the throat was so rarely met with by him. In almost every case of syphilitic iritis I have witnessed, it has been attended with a superficial excoriation of the fauces. There is but one solitary case in which the periosteum was affected. This agrees with my view of the subject; hence I have with reason placed iritis among the secondary symptoms of syphilis.

The records of these cases likewise prove that primary symptoms may not have disappeared when iritis commences, as happened in five instances.

TREATMENT.—The consideration of the causes will often enable a surgeon to prevent the occurrence or recurrence of the affection, and I need not again refer to them, nor state how these exciting causes should be avoided.

When the disease is at its commencement, and the general symptoms run high, it was formerly the practice to deplete locally and generally. Mr. Tyrrell has related several interesting cases to show the inefficacy of antiphlogistic measures when carried to excess.

In my own practice (and in this respect I believe I merely endorse the opinion of nearly all eminent ophthalmic surgeons) I seldom need

to use the lancet or leeches. There are, however, cases of intense pain in the eye which are relieved by local abstraction of blood when all other remedies fail.

The affection, however, is not one which would probably be benefited by bloodletting; for the objects of depletion are to relieve pain, which is said to depend upon inflammation of the unyielding sclerotic coat; to check that inflammation; prevent the effusion of more lymph, and cause the absorption of that which is already poured out; and to destroy any adhesions the iris may have contracted, and, by dilating it, allow of free movement to the pupil. These objects are best fulfilled by mercury; not, however, given in the manner we have previously recommended. The importance of the organ, and the rapidity with which mischief may occur, demand a more liberal use of the mineral. The opponents of mercury generally, are here unanimous in favour of its utility. The preparation which some surgeons prefer is calomel and opium, in the proportion of two grains of the former to a quarter of a grain of the latter, given every six or eight hours. As the disease yields, the frequency of the doses may be diminished.

There are some observations on the administration of mercury in Mr. Tyrrell's work, which will amply repay the attention of my readers. As that gentleman justly observes, mercury is of invaluable service even in the worst cases and most depressed states of constitution, provided we at the same time support the system by generous diet and a small quantity of stimulus. From a non-observance of this rule, mercury has fallen into discredit in some practitioners' hands.

During the last few years these heroic doses of calomel and opium have been gradually losing their advocates. There are even those now who assert that we may dispense with the calomel, provided we continue or augment the dose of opium. In this I cannot quite agree, but I think that, as soon as the system is under the influence of mercury, just short of salivation, and the gums become sore, the calomel may be left off and chlorate of potash should be at once given. As soon as the mouth recovers, there is no further occasion to give calomel. Under these circumstances, hyd. c. creta, or blue pill, together with hyoscyamus, are the best preparations, as they have no tendency to confine the bowels. It is not only necessary to give mercury in moderate doses, but to persist in it for some weeks. To support the system, and watch for the ill-consequences which mercury may produce, is the main object of judicious treatment. If we lose sight of this object, we shall fall into one of two grave errors. Either we shall be obliged to leave off the mercury altogether, or to persist in it when it is causing serious detriment to the constitution.

To leave off mercury when the eye ceases to benefit by it is one of the results of experience. As I have stated at page 464, iritis will come on even during the time salivation exists. In such cases further administration of mercury would be not only injudicious, but dangerous, and, I believe, has caused the loss of many eyes. No medicine of any kind, except chlorate of potash, should be given any longer; this, with good diet, rest, and warmth, will often effect a cure.

As soon as the system rallies, the iodide of potassium, with tonics, is often very beneficial. Still it should not be lost sight of, that, as I have stated elsewhere (page 362), mercury at a later stage may be again necessary, and may, although it acted injuriously in former stages, be of great benefit at a later period, particularly if relapses occur.

There is a symptom in iritis which requires some notice before quitting the subject of treatment; I allude to pain in the eye. As I stated above, local depletion is the best method of relieving this symptom. Steaming the eye is sometimes beneficial, by placing boiling water in a jug, and by means of an inverted funnel bringing the steam into contact with the eye. Hot fomentations should not be employed. In other cases I have seen benefit derived from a piece of flannel, soaked in chloroform and oil, placed on the brow, and changed occasionally. Blisters are, I think, not so beneficial in these deep-seated inflammations of the eye as they were once thought to be, and they occasion much local annoyance.

Green and other Shades.—Almost all ophthalmic surgeons now have abandoned shades, as doing more harm than good. It is well to keep the blinds down, but not to make the room too dark, otherwise the eye is rendered very susceptible, and the irritation increased. If a shade be used, it should be a large one, that will protect both eyes, as it is not advisable to protect the affected eye only.

Diet.—As regards diet, the modern ophthalmic surgeon is very liberal—meat of an easily digestible kind is usually allowed except in the early stages, and we generally permit a patient to take two or even three glasses of wine as long as the inflammation does not run very high.

Local Applications.—Surgeons have now come to the conclusion that in those cases where the deep structures of the eye are principally affected, local applications are not necessary, and often do harm. In nervous patients, who insist upon some local application, and believe they will not get well without them, the simpler the means we use the better, such as poppy-head fomentation or a weak collyrium, but the eye should be covered with folded cloths, or heated as little as possible.

Belladonna and Atropine.—There is considerable diversity of opinion as to the employment of these applications. Many consider that the solution of atropine is preferable as less likely to soil the clothes and not disfigure the patient so much as belladonna when smeared over the brow, as it used to be. It is not necessary to use the solution strong, one or two grains to the ounce of water are sufficient. This weak solution will not irritate the eye, and may be dropped into it or applied as a lotion as often as it may be thought necessary to dilate the pupil, which the solution effectually does. That it may be beneficial in destroying the adhesions when fresh, there can be no doubt. It is also useful in dilating the pupil so as to enable us to examine all the deep structures of the eye by the ophthalmoscope. I think, however, with many other surgeons, that the indiscriminate application of belladonna is objectionable—particularly as mercury will remove the lymph, and with it the adhesion disappears.—Some believe, also, that

constant dilatation of the pupil stretches the iris and increases the irritation of the eye.

CHRONIC IRITIS AND RELAPSES.—In some constitutions iritis takes on a chronic form with slight modifications. The treatment is the same. Syphilitic iritis is as liable to relapses as any other secondary symptom. Formerly, however, this recurrence was much more common than now. The difference, I believe, arises from the longer time during which modern practice continues the treatment. I always warn my patients that, if they leave off the remedies as soon as the mere redness of the eye has disappeared, they are almost certain to have a return of the complaint.

CHAPTER III.

TERTIARY SYMPTOMS.

WE now have to consider *tertiary symptoms*, which, it will be remembered, formed the third division in our arrangement (p. 268) of the general subject of syphilis.

DEFINITION.—By the term *Tertiary symptoms*, we mean those constitutional syphilitic affections usually included under the name of *nodes, inflammation of the periosteum, exostosis, caries, and tubercles of the subcutaneous and submucous cellular tissue.*

It will be observed that tertiary symptoms generally occur in the subcutaneous or submucous cellular tissue, in the structure of bones, fibrous textures, lymphatics, testes, or in the liver, lungs, brain, heart, and muscles; “but I have,” adds Ricord, “found that serous membranes remain free from tertiary lesions.”

HISTORY.—Previous to Hunter’s time all these symptoms which we now call Tertiary were confounded with secondary symptoms, under the general term, *lues venerea*. Hunter, without placing them in a division quite apart from the rest, thought it, however, necessary to distinguish them, in some measure, from secondary symptoms, properly so called; hence we find them placed together, and classed under Paragraph III. in his work, which is thus headed—“Symptoms of the Second Stage of the *Lues Venerea*.”

M. Ricord, in his classification, preferred separating them from secondary symptoms, and making a distinct division, which he has called Tertiary symptoms. In the following description it will be seen that they differ from secondary symptoms in various points, and to a sufficient extent to authorize us in placing them in another division. Though they depend upon chancre, they follow it after a much longer interval; they are seated in other and deeper tissues, cannot be transmitted from mother to child, but are supposed to be directly capable of producing a scrofulous diathesis in the offspring.

Although tertiary affections are in classification rightly separated from secondary symptoms, there is sometimes great difficulty in assigning a symptom to one or other division, as a very slight line of demarcation divides the late secondary symptoms from the early tertiary ones. Some indeed have been called symptoms of transition. Still, in most cases, the distinction is generally well marked, and in a practical point of view, in regard to treatment, is of the greatest importance.

In accordance with the plan I have hitherto followed, I shall lay down the general principles applying to these affections, and then shortly specify the particular forms.

CAUSES.—Those who have seen syphilis of late years treated by simple means, without the aid of mercury, have been able to observe the natural history of the disease uncomplicated with those effects which mercury *may* produce. In such cases we have been able to trace tertiary symptoms to the effects of the syphilitic virus, at first committing unusually severe local ravages, next infecting the constitution with a severer form of secondary symptoms, and, lastly, giving rise to such lesions as we are about to speak of. In consequence, then, of these symptoms appearing when no mercury or any other treatment has been had recourse to, as well as from their occurrence at a certain period after the primary introduction of the syphilitic virus into the system, surgeons are agreed to attribute them to constitutional syphilis, or the existence of the syphilitic diathesis.

It would, however, be an error to suppose that syphilis, when left to itself, universally produces these effects. Fortunately for humanity, experience has shown that in the majority of cases tertiary symptoms do not occur, unless excited by

PREDISPOSING CAUSES.—It is not so easy to discover the predisposing causes of tertiary, as of secondary symptoms. Indeed, the further we get from the primary chancre the greater is the difficulty of connecting the tertiary symptom with the primary one, though their relation is undoubted.

We may, however, generally ascribe them to some idiosyncrasy of the constitution or to some neglect or improper treatment. In some peculiar constitutions, tertiary symptoms will occasionally occur, in spite of all our endeavours. Such cases are, however, of very rare occurrence, and under modern treatment rarer than ever.

The *constitution*, then, as a predisposing cause, may have a considerable effect. Observation shows that persons of a lymphatic temperament are most subject to the ravages of syphilis; this we have seen throughout the whole history of the disease, and it is more especially true of this stage; for, as we shall presently see, scrofula and tertiary symptoms have many points in common. Nevertheless, it is by no means in the pale and the emaciated only that we observe such effects, for tertiary symptoms of syphilis often appear in very severe forms in stout and plethoric individuals.

That the constitution of a patient has a marked influence in inducing tertiary symptoms appears from the fact that they occur so rarely in cases of the *uncomplicated indurated chancre*. This form of sore, as the previous pages show, is followed by all sorts of chronic affections of the skin, which may last for years, and be very tedious, though not dangerous; but they ultimately get well; and as far as my experience goes, if properly treated, are never attended with tertiary symptoms, or so seldom as to prove the rule. Even the few cases that happen will, I think, be found either to have been complicated

with phagedena in the primary symptoms or to depend upon the constitution being impaired by subsequent illness.

Since the value of iodide of potassium has been discovered as a remedy in these diseases, uncomplicated indurated sores are hardly ever followed by tertiary symptoms. In my own private practice I have never yet seen such an occurrence.

On the other hand, when phagedena or gangrene, in any of its forms, has complicated the primary sore, or severe illness has depressed the patient while the primary affection lasted, no one can guarantee the patient against tertiary symptoms. This result has so constantly attended cases in my own practice, and that of others, that I have long been endeavouring to ascertain whether any and what relation exists between phagedena and tertiary symptoms. All, however, that I am at all clear about is, that the same constitution which causes the sore to take on a phagedenic action, predisposes it at a later period to suffer from the severer forms of secondary symptoms, which, instead of being dry, are more or less of an ulcerative form. These become phagedenic under slight causes, and ultimately terminate in tertiary symptoms of the severest types. Without believing with Mr. Carmichael that there exists more than one virus, and that each is attended with appropriate secondary symptoms, I am fully convinced that the individual constitution largely influences and modifies the primary sore as well as the secondary and tertiary symptoms. This occasionally appears in a very marked manner.

The following are a few among the many instances I could give :— Two brothers of about the same age, men of singularly powerful frames, resident in Scotland, accustomed to take violent exercise and not habituated to excesses of any kind, came under my care at intervals of many months with primary sores. In both the primary sores were phagedenic, and the tertiary ulcers that followed were of the severest type. The elder contracted the sore on the Continent, the younger in Scotland. They both recovered, and are now quite well.

I have seen a case of severe tertiary affection in a gentleman in whose family it is well known that there is an almost hereditary tendency towards affections of the bones when once syphilis is acquired. One of the severe cases mentioned at page 326, is another illustration of how these affections occur in families. The brother of the gentleman whom I attended returned from India, and died in England from the ravages of syphilis attacking the bones and internal organs. Some of these cases almost induce the belief that secondary symptoms have never appeared, and that tertiary symptoms follow directly on the primary ones, when the latter are complicated with phagedena or gangrene. Patients tell us that it is so with them, and there are books which relate cases where secondary symptoms do not occur ; but the patient, after dreaming that he is in perfect security, is suddenly surprised by one of the after-consequences we shall presently describe attacking some of the deeper structures, and tertiary symptoms begin their terrible course without any premonitory symptom except the phagedenic character of the original sore. I have not met with many of these cases in my own practice ; probably

owing to the employment of iodide of potassium. The more common case, however, is, that secondary symptoms of a violent kind occur even before the primary ones have disappeared, and the tertiary symptoms come on before the patient has recovered from the secondary symptoms. Indeed, in the worst forms, which are fortunately exceptional, the three phases of syphilis may exist at the same time.

On what the peculiar diathesis that produces this fearful complication of diseases depends no one can say. Happily for humanity, it is now apparently nearly extinct. But we must bear in mind, that though now exceptional, it was (if we may believe the historians of the disease), about four centuries ago (1496), the rule.

The gradual disappearance of the more terrible forms of syphilis suggests an important question—Will future experience and investigation prove that just as the indurated chancre, once having run its course in a constitution, gives that constitution an immunity from a second contamination of the same kind, so the infection of a parent's system with syphilis will bequeath to his children an immunity from the disease, which the parent who has had no such affliction is unable to give. In other words, Will it be found that the immunity is hereditary? I believe not. I can hardly believe that my Scotch patient and his brother (in the case mentioned above) were the first of their family on whom the syphilitic virus had ever acted. I have not yet been able to lay down certain rules as to the effect which the infection contracted by such patients may have upon their children. It would require years to collect regular or positive evidence sufficient to generalize upon; but the subject, it seems to me, deserves the careful consideration of the sanitary reformer.

On the whole, I incline to believe that, instead of any such hereditary immunity existing, the same predisposing and exciting causes would produce the same results in the children as well as the parents, whether the latter had ever been infected with syphilis or not.

To return, however, to our immediate subject.

The *previous habits* of the patient will act as a powerful predisposing cause: thus, a constitution naturally good, but depressed by dissipation, poverty, insufficient clothing, exposure to damp or unwholesome air—in fact, to any of those causes which induce severe forms of secondary symptoms, will be peculiarly liable to be attacked by the tertiary form.

Previous disease will naturally have a great influence: in the first place, we may mention the existence of secondary symptoms. It is a fact which cannot be denied, that, when chancre has produced secondary symptoms, the tertiary form of syphilis is more likely sooner or later to appear, showing a tendency in the constitution which, unless successfully combated, will produce the worst results. The severity of the forms of secondary symptoms, the length to which they have been allowed to run before any remedy has been used, and the period for which the *syphilitic temperament* has existed, are so many predisposing causes, and may furnish the surgeon with many indications which will induce him to judge of the probability of the occurrence of tertiary symptoms.

The Treatment of the Primary and Secondary forms may act as a very powerful predisposing cause. I need not here repeat what has already been said on this subject with regard to primary sores, nor do more than allude to what was stated under the head of Predisposing Causes of Secondary Symptoms. With respect to the treatment of secondary symptoms, daily observations prove that, if constitutional syphilis is treated without mercury, tertiary symptoms may occur; and that even when mercury is employed at an early period of the occurrence of secondary symptoms, the appearance of tertiary symptoms cannot always be prevented. If, however, the mineral has been used judiciously, they will be slight; but if it has been injudiciously employed, or if the precautions spoken of under the section on the Employment of Mercury be not attended to, tertiary symptoms will not only occur in spite of, but become complicated with, those effects which depend upon the mineral; the constitution will be depressed, and the two diseases carried to an extent that is now fortunately rarely witnessed.

COURSE.—This stage of syphilis has often a peculiarly chronic character. In the majority of cases, and under the circumstances above described, the secondary form passes insensibly into the tertiary, for the limit between the two stages is by no means always distinct. In the natural course of syphilis, as has been stated, this transition is insensible; without any accession of general symptoms, the tertiary form frequently appears during the existence of the secondary, in the same way that the latter may come on during that of the primary. Under other circumstances, the secondary symptoms may successively disappear and return, and ultimately assume the tertiary form.

And in the rare cases that have been mentioned,—after a patient has been treated for a primary phagedenic indurated sore by mercury, a considerable lapse of time may pass away, and secondary symptoms may not follow; but after exposure to cold, from disease or some exciting cause, or in consequence of the system having become debilitated, tertiary symptoms may all at once appear, at first under a slight form, but afterwards increase in severity. These cases tend to prove the protective power of mercury, though, in many respects, they militate against the idea of its specific powers.

EVOLUTION AND PROGRESS.—M. Ricord says, “Tertiary syphilis often produces another alteration, which bears to plastic degeneration the same relation as suppurative syphilitic eruptions bear to dry ones—namely, the elastic tumour, or the tubercle of the cellular tissue. These tumours may spring up wherever there is cellular tissue, be the latter subcutaneous or submucous; and they have been found wherever that tissue exists. They may develop themselves around the spermatic cord, between the epididymis and the testicle; in short, in all the cellular elements of the liver, lungs, brain, testicle, &c. These tumours are now called gummata, and form the characteristic element of tertiary syphilis.

This elastic tumour, yielding to the hand a sensation as if it were filled with gum, is an essentially tertiary accident; it never appears before the fifth month after contagion, which is the primary cause of the tertiary affection; but it may also come on thirty or forty years

afterwards. It mostly begins with a hard kernel, of a small size, situated in the deeper layers of the skin; it grows very slowly, so much so, that I am not quite sure of the size which it may reach; but this development takes place without any local or general reaction, and in the cases I have observed, the tumour seldom exceeded the size of a walnut, and mostly remained much smaller. These tubercles or elastic tumours are not confluent, and this fact is sufficient to establish a distinction between them and molluscum, which, generally, is remarkably confluent. When the elastic tumour settles in the testicle, it is mostly solitary, all the surrounding parts remaining perfectly sound. I have found such tumours in the brain, and M. Cull  rier has reported a case where this organ was so affected. The disease, when situated in the lungs, has, perhaps, more tendency to the deposition of numerous tubercles of this kind. When an elastic tumour is left to itself, or treated by mercury, it will inevitably suppurate; and before the use of the iodide of potassium was introduced, it was looked upon as incurable. Thus, M. Cull  rier always advised the cauterization of such tumours, and I was in the habit of advocating their removal with the knife. As the syphilitic tubercle grows, it becomes rather painful; this is almost always owing to inflammatory action set up within it. Before this complication occurs, it lies quite free in the cellular tissue, and adheres to the skin only at one point; but, when inflammation sets in, it gets confounded with the surrounding tissues, its mobility is lost, the skin covering it becomes red, swells, softens, and ulcerates on one or several spots, and a deep ulcer follows the plenteous discharge of purulent matter. The edges of the sore become undermined, and the neighbouring parts are involved in a destruction which varies according to the organs whereon the tumour has settled."

The different forms the tumour assumes in the various organs of the body will be presently more particularly specified.

The COMPLICATIONS are various; inflammation, gangrene, scorbutic diseases, or scrofula, may occur, altogether masking the disease, which gradually loses its specific appearance, and degenerates into a general disease of the whole system. Of course, as one or other of these complications occur, so will the course of the tertiary symptoms be altered, and the termination be different.

PATHOLOGICAL ANATOMY.—The distinguished Berlin Professor of Pathological Anatomy, M. Virchow, considers that "tertiary symptoms commence in the corion itself, in the sub-mucous and sub-cutaneous cellular tissue. In these structures a gelatinous exudation is deposited, which becomes subsequently tuberculated; the softening of this produces deep ulcerations, followed by a deeply-starred cicatrix, which can never be eradicated. (See p. 435.) These gelatinous exudations, which we call GUMMATA, Virchow goes on to say, arise from a proliferation (cell-formation) of the conjunctive tissue, and their development is somewhat analogous to the mode of formation of granulations.

"The subsequent development of the gummous tumour may follow one of two courses. In one, the cell-formation (proliferation) gains the ascendant, and then the inter-cellular substance

becomes rapidly softened, gelatinous, mucous or fluid. The substance of the tumour melts (so to speak), becomes puriform, opens, and ulcerates, as in gummata of the sub-cutaneous cellular tissue. In the other, the tumour remains of a gelatinous consistence, and preserves a certain coherence, as in gummata of the periosteum. Sometimes the cell-formation is scanty, the inter-cellular substance augments, and the cells themselves retain the fusiform or stelliform (starred) character of the conjunctive tissue. Again, they may assume the rounded form proper to the cells of granulation; these subsequently become fatty, and it is thus that the dry and yellow nodule (tubercle) of the internal organs is formed."

The microscope has now enabled us to study these growths accurately, and we notice that the gummous bodies present no histological character which can absolutely distinguish them from simple inflammatory productions. Their distinguishing characteristics consist (and in this respect they bear a close analogy with the other ordinary alterations produced by syphilis) in certain peculiarities in their history, their position, their mode of appearance, their relation to one another, and their ultimate consequences. These practically enable us to give in most cases an absolute diagnosis.

The PROGNOSIS is always grave; it shows that syphilis has made deep inroads on the constitution, and that its cure will require time, and a treatment which demands patience on the part of the surgeon and the patient; the latter, however, should be made aware of the precautions necessary to be taken, and the consequences of their non-observance. Although the disease may be often checked, it is always liable to return; and there are cases in which our treatment can be only palliative, or the patient, having consulted us too late, is obliged to bear the deformities which nature is unable to remove, although art may frequently alleviate them.

"Tertiary symptoms," Ricord thinks, "never occur in children immediately after birth as an hereditary manifestation, unless the parent who has transmitted the taint, has undergone a treatment for secondary symptoms—the father at the time of impregnation, or the mother during gestation. The tertiary symptoms hardly ever come on before the sixth month after the occurrence of the primary sore. Still it may happen once in a thousand cases, that they appear towards the fourth or fifth month. When the half year is passed, there is no limit within which the tertiary symptoms must of necessity arise; they may come on after many years. These tertiary manifestations are as rare as the secondary are common; but, still, you can never promise a patient that he will be free from them.

"Syphilis in this tertiary period is no longer hereditarily transmissible in its proper form, but it modifies the system in a different manner—namely, it engenders scrofula. M. Lugol's and my own observations fully verify this assertion."*

DIAGNOSIS.—The reader will doubtless have remarked, that the further the form of disease to be decided on, advances from the earliest

* Of course, while patients are suffering only from primary disease, such a prognosis of tertiary symptoms can be given only in most exceptional cases.

stage of primary infection, the less certain becomes the diagnosis. During the ulcerative period of chancre, a positive diagnosis can be arrived at only by means of inoculation ; but when cicatrization has once taken place, we are obliged to confine ourselves to a rational diagnosis. This becomes more evident in secondary symptoms ; although there are certain features which are peculiar to secondary symptoms, as, for instance, mucous tubercles.

In the form of tertiary symptoms our diagnosis must be founded on rational principles alone, for we have no certain test. The history—the antecedents—the course—the concomitant circumstances—the treatment—the character of the affections—will, if taken together, indicate the nature of the complaint, and enable us to form a diagnosis, but this should be always done with caution. The treatment should be such, that if our diagnosis be incorrect, the remedies made use of cannot be injurious. This is a rule that our readers will shortly be enabled to appreciate.

TREATMENT.—*The preventive and prophylactic treatment* of tertiary symptoms will consist, in a great measure, in the employment of the means recommended when treating of secondary symptoms, p. 417, and in paying attention to the rules there laid down. It is unnecessary again to return to that subject. The same remark applies to causes both predisposing and exciting. When any predisposing cause is discovered, the surgeon will of course endeavour to remove it if it already exist, or prevent its development by all the means in his power ; this cannot always be done, however much it may be desired, especially if the patient seeks medical aid too late ; the surgeon's business is then only to remove, in as short a time as possible, the effects produced ; and this brings us to a consideration of the

Curative Means.—In M. Ricord's work on the treatment of tertiary symptoms, we find the following paragraph :—

“ Although we recognise the syphilitic virus as the regular cause of tertiary symptoms, we must allow that it undergoes a modification in secondary symptoms, in consequence of which it is no longer inoculable. In tertiary symptoms this modification is still more striking. If it were not hazardous to form an hypothesis in order to explain facts, the proximate cause of which it is difficult to fix upon, it might be said, that in the *secondary symptom*, which is kept up by its presence, the virulent cause still exists ; that *in the tertiary symptom it is completely transformed.*”

The importance of this last principle cannot be overrated ; it forms one of the best indications for the treatment which, whatever it may be in secondary symptoms, ought not to be specific here. Tertiary symptoms must be treated on general principles ; the same means should be employed as if the diseases we are called upon to treat depended upon any other rather than a specific cause.

Our first care should be to remove all inflammation or irritation which can aggravate the local disorder ; this point gained, we may next turn our attention to the constitution. The employment of tonics, nutritious diet, additional clothing, &c., will often have the best effects. Among other preparations, we have observed those containing the principles of *opium* to be followed by the best effects in

allaying local and constitutional irritation. *Mercury*, in its various forms, is, generally speaking, as prejudicial at this stage as it was beneficial in secondary symptoms; and although in some few symptoms of transition between the secondary and tertiary, as in deep tubercles of the skin, attended with callous ulcerations, it may still be advantageously employed, it is nevertheless true, that the further the disease advances beyond the early stage of secondary symptoms, the less efficacious mercury is found, until it ends in becoming highly prejudicial. Even when it is to be used, it should be combined with iodide of potassium.

That ill-consequences follow a course of mercury given in this stage of syphilis is a comparatively modern discovery, as is also the substitute for it of iodide of potassium, a preparation which daily experience in various parts of the world promises to establish as one of the most efficacious in the Pharmacopœia.

IODIDE OF POTASSIUM.—Those who have, like myself, witnessed the operation of this preparation in all the stages of syphilis, will allow that its good effects are especially evident in the treatment of tertiary symptoms. But, although the iodide is justly considered as a remedy for this form of the complaint, we must not forget that it will not always destroy the diathesis. It will often produce only a modification and mitigation of the symptoms without completely eradicating the diathesis. Beyond this, neither mercury nor iodine will act.

- Until the last few years, anything but unanimity has prevailed on the cases in which the iodide of potassium should be given. I have at p. 417 mentioned the opinions of Sir B. Brodie and M. Ricord on the value of this preparation. The late Dr. Williams was a great advocate for iodide of potassium, and he seems to have given it pretty indiscriminately in all cases, in preference to mercury; but on closely examining his cases, the reader will at once see that he admits its frequent inefficiency, although he does it with hesitation, and believed that it cured some varieties of eruptions.

As I have already stated at p. 417, *et seq.*, iodide of potassium cannot, generally speaking, be depended upon in secondary symptoms. But although its effects are found to be uncertain in this stage of the complaint, observation every day shows that it possesses an almost specific influence on tertiary symptoms. Indeed, it is now admitted to be a preparation without which we could hardly treat syphilis properly when it has assumed the tertiary form.

Mode of Administration.—I am in the habit of prescribing the salt according to the following formula:—

℞ Potass. Iodidi . . . ʒv.
 Tt. Gent. C. . . ʒij.
 Syrup. Simpl. . . ʒxiv.

M. ft. Mist., sumat coch. mag. unum ex cyatho amplo (*a small tumbler*) infus. quassiae ter die.

The formula for the quassia in mixture is as follows:—

℞ Rass. Quassiae . . . ʒij.
 M. ft. chart. pro infus.
 Mitte chart. vj.

The contents of one of these papers should be put into an empty jug, and a pint of boiling water poured on it. After allowing it to stand two hours, it should be strained, and the patient should drink the pint of bitter infusion at three draughts, putting into each small tumbler of the fluid one tablespoonful of the syrup.

Where patients are obliged to be moving about, and find it an annoyance to carry bulky fluids with them, I prescribe the iodide in the following formula :—

R Potass. Iodidi . . . ʒss.

Aquæ ʒiv.

M. ft. Mist., cujus cap. cochl. min. j. ter die.

This mixture may be taken in beer, porter, or soda water.

The great secret in giving iodide of potassium is to administer it in large quantities of fluid, so that it does not irritate either the throat or stomach. Although given in large doses, the stomach is very tolerant of the remedy if properly diluted.

It is a very general belief in London, among our leading surgeons, that all the good that iodide of potassium can do, will be obtained if three or five grains be given three times a day ; more than that, I am daily told, will do harm, or if more be given with impunity, the article is spurious. I do not wish to underrate the good effects that often result from small doses, but I am convinced that large doses may be given, not only with impunity but with more benefit than small ones. I have had a gentleman from Scotland under my care, who took the remedy in such quantities that he purchased it by the half pound, and yet it was a genuine article. Small doses will often fail in eradicating disease when larger doses will succeed.

In a case I saw some years ago, tertiary symptoms of the nose and brow had not been cured, though somewhat relieved by small doses of iodide of potassium given by the direction of another surgeon for nine months. The salt had been obliged to be left off, because iodic intoxication was said to have been produced, together with symptoms of affection of the brain. Now in these instances the length of time, and not the dose, was in fault. Surgeons who entertain these ideas do not scruple to prescribe iodide of potassium for years, though they dread it in large doses.

I saw with the late Mr. Vickers, a gentleman who has now entirely recovered, to whom we successfully gave large doses of iodide of potassium with bitters, though small doses given for long periods under the advice of other practitioners, had failed in curing him. I mention these cases because prejudices exist against the employment of the remedy ; whereas, in France, M. Ricord gives it in anything but homœopathic doses, and with the most signal success.

The effects of the remedy show themselves in first producing an increased quantity of urine, which is pale and straw-coloured. The general surface of the skin loses its unhealthy character, the appetite improves, the circulation becomes somewhat increased, and the system rallies. Ulcers heal, pains in the bone disappear as if charmed away, and the general health is re-established.

In some cases the administration of the salt is followed by no other than these favourable results. In others the face becomes covered

with reddish spots of *Acne*, and on the back *Acne Indurata*,* in its worst forms, may occur, particularly in persons of thick skin.

In others, again, a very profuse discharge of a secretion like serum takes place from the nose, and will wet through several handkerchiefs in a few hours ; it is of great importance that the patient should be told of the probability of these occurrences, or he may become much alarmed. I lately had a patient at Cambridge to whom I gave iodide of potassium ; he returned to college ; this discharge from the nose took place ; he confined himself to his room, kept his bed, and sent for a surgeon in the town, who recommended him to continue my prescription, under the supposition that he was merely labouring under severe cold, with pain in the head. As my patient did not get any better, he came to town to consult me. I at once relieved his anxiety by explaining that this was not a very unusual, although a very unpleasant occurrence.

Sometimes this remedy will affect the eye, which will become injected ; the redness, however, is confined to the conjunctiva, the deeper tunics remaining unaffected ; sometimes the side of the face will swell. In some instances I have remarked iodide of potassium producing a hot skin, a parched mouth, and some fever.

I am occasionally called into consultation in consequence of patients complaining of pain at the pit of the stomach, after taking even small doses of the salt. In these instances I generally find that the remedy has been given in a very small quantity of fluid. On increasing the quantity of fluid, I hear no more of this pain.

In the former edition I recommended that, in those cases where the iodide seems to be producing distress or even harm, it should be left off for a time, and purgatives given. Now, however, I pursue an exactly opposite kind of treatment, and am supported by the authority of all the surgeons at the Venereal Hospital in Paris. We no longer dread this iodic intoxication, as it is called. When it comes on, the patient may be kept in bed, but the same dose of the iodide should be continued, or even augmented if necessary ; and in a few days the symptoms pass off, and will not return, even if the dose be augmented afterwards. It is not an uncommon occurrence to see in the hospitals in Paris a patient with his face so swollen as to be unable to see out of his eyes, and yet in a day or two all will be well, and no ill-consequences will follow ; and, which is the chief thing, the disease for which the salt was given will diminish. In fact, no more is now thought of the swelling than if it had arisen from the irritation of a bad tooth. As this is the treatment that we should follow, it may be well in private practice to tell the patient before commencing the

* An officer in the Artillery contracted, so he says, chancre ; under treatment the sore healed. Some spots on his body, believed to be syphilitic, appeared, and he took iodide of potassium. The spots increasing, he went before the Board and obtained a sick certificate, and shortly afterwards placed himself under my care. On inspection I noticed on various parts of the body inflamed tubercles of acne indurata. I ordered all remedies to be left off, desired my patient to take pil. rhei c., and a warm bath every other day. In four days he was quite well. As regards the history of this case, I am dependent on the patient's statement, who assured me that the Board viewed his complaint as very serious, and considered him to be labouring under severe secondary symptoms.

administration of iodide of potassium that these consequences may possibly happen, and that he need not be alarmed at them.

Modus Operandi of the Remedy.—The late Dr. Williams believed that “iodine has an affinity for the syphilitic poison, which it modifies and deprives of a part of its power to inflict disease. The iodide of potassium is probably absorbed in substance, and so rapidly, that iodine may often be detected in the urine within ten minutes after the patient has swallowed it. It is found also in the saliva, in the tears, in the milk, and, probably, in the other secretions of the body ; but it has not been satisfactorily demonstrated in the blood, being either so rapidly removed as to exist only in quantities too minute for detection, or else, perhaps, being resolved into its elements. The best test for the iodide of potassium in the urine, is first to add a solution of starch. and then a small quantity of the solution of chlorine ; this latter agent immediately setting free the iodine, producing the usual beautiful violet or indigo tint.”—(“Elements of Medicine,” vol. ii. pp. 167, 168.)

When to be left off.—This remedy may be continued for some months without producing any ill consequences ; in fact, the more it is required the better it is borne ; under it the symptoms disappear, the patient grows quite fat, and recovers a state of health he has been a stranger to for many years. In these instances I continue the remedy for six weeks, or even three months after the disappearance of all the symptoms, and in cases of relapses I have again recourse to it, or continue it with doses of mercury proportioned to the severity of the complaint.

What Ill Effects arise from its Administration.—Although I have given iodide in large doses, and for long periods, I have never yet seen atrophy of the testes, or diminution of the virile power ; on the contrary, this very inclination, which ill health has suspended for the time, returns in its full vigour as the body recovers its former healthy condition. Nor have I ever witnessed any effect on the mammary glands in women, as some authors affirmed on the first introduction into practice of the remedy. In saying this, however, I have not witnessed the large doses previously recommended taken uselessly for a great length of time for secondary symptoms. If I had, probably I should have noticed some of the evil consequences mentioned by others. In the course of conversation with Sir B. Brodie some time since, that accurate observer told me that he was aware of three cases, now inmates of lunatic asylums, whose state had, in his opinion, been brought on by large doses of iodide of potassium. I recently saw an instance of commencing softening of the brain in a person who, for long periods, had taken large doses of iodide of potassium ; but, even in that case, I could not say that it was the salt alone which had induced the affection. It requires more than an isolated case to prove the relation between cause and effect, particularly in affections of the brain. In conclusion, I may say that after giving iodide of potassium in considerable doses in a number of private cases whose history I have traced for many years afterwards, I have no cause to regret or fear the consequences of the remedy.

Having passed in review the symptoms, diagnosis, and treatment of tertiary symptoms generally, I shall now briefly allude to the more common individual forms, and say a few words on their appropriate treatment.

SYPHILITIC AFFECTIONS OF THE TESTICLES.

In preceding editions I described this affection under the head of Secondary Symptoms. In the present I have preferred inserting it here.

Syphilitic affection of the testicle is a symptom of transition, which may be classed either among the secondary or tertiary symptoms caused by the syphilitic infection, and is an additional proof, if any were wanting, to show that our divisions are merely arbitrary, and that the late secondary symptoms have a close relation with the early tertiary ones.

The affection of the testicle seldom appears until six months after primary infection, and very often not until years after. We observe it sometimes during the course of secondary symptoms which occur late, but most frequently it exists either alone, or accompanied with pains in the bones, exostoses, or gummata.

Syphilitic affections of the testicle are at present rarely met with in private practice, and even in hospitals they are not often seen. The general employment of iodide of potassium, of late years, is probably the cause of the absence of this symptom, and in a few years the affection may be unknown.

SYNONYMOUS TERMS.—This affection was described by Sir Astley Cooper in the chapter "On the Venereal Affection of the Testicle." Syphilitic Sarcocoele is the term employed by M. Ricord, who says in his lectures (see *Lancet*, vol. i. pp. 572, 599, 1848), "This affection has also been called albuginitis, syphilitic testicle, &c. This lesion of the testis was well known to Hunter and Dupuytren, but Astruc, long before them, had a notion of its nature ; for he made a distinction between orchitis resulting from chancre and orchitis following blennorrhagia ; and Bell in his turn took advantage of Astruc's observations, in order to attempt the differential diagnosis between the two affections.

SYMPTOMS.—"Syphilitic sarcocoele generally begins in one testis, and then affects the other, but it may attack both at once. There are hardly any premonitory symptoms ; slight nocturnal pains in the loins are sometimes experienced, but they are extremely rare, and the affection may come on, and reach a great development quite unperceived by the patient. When his attention begins to be attracted to the part, he finds the testicle already of a considerable size, heavy, and pretty hard ; but the size is not invariably increased in every case. With some patients, I have known the disease to run through all its stages without creating any uneasiness ; the erections, however, become less frequent, the venereal appetite less imperative, and the seminal fluid gradually diminishes in quantity. If the disease is allowed to proceed undisturbed, the testis ceases to increase, it then

diminishes in size by the re-absorption of the plastic effusion, and the patients are delighted to see their affection thus apparently declining ; but the disease soon outruns the normal bounds ; the testis becomes atrophied, and disappears more or less completely. This atrophy is always preceded by a fibro-plastic degeneration. The latter takes place in the following manner:—It begins in the body of the testicle (provided the patient be not labouring under any other diathesis than the syphilitic), and two or three points are generally attacked at once. Up to this time the organ retains its normal shape and aspect ; nothing out of the way can yet be felt by the hand, except the testis be well isolated from the scrotum, when thin, hard, and fibrous zones will be noticed to surround the body of the testis. Nodules of a greater or lesser consistence soon form, and from them proceed radiations exactly as the osseous radii are given off by an ossified point in the cranium. The whole body of the testis becomes thus involved, and the tumour is felt homogeneous, hard, resisting, heavy, and pyriform. The epididymis, which at the outset was in an almost normal state, and could readily be distinguished, is now flattened against the posterior part of the testicle, and can no longer be felt. The reverse takes place in *tubercular* sarcocele, for in this affection the epididymis has a very thick and distinct outline. Whatever development the tumour may take, no other element of the testicle undergoes any morbid change, and the vas deferens as well as the prostate gland remain free from alteration. I need not say that these two organs are attacked very early in tubercular sarcocele ; in the latter affection we likewise see the other parts entering into the formation of the cord suffer greatly, whereas nothing of the kind is seen in syphilitic orchitis. I must here state, that the pyriform shape, which has always been looked upon as a diagnostic sign of syphilitic sarcocele, is not always present ; for instance, it does not appear when one or two points only of the body of the testis are engaged. Notice also, that in the syphilitic affection we have none of those inequalities which the fibrous nuclei produce in the tubercular sarcocele. I have seen patients in whom the nucleus was situated in the centre of the testis itself, and surrounded by healthy textures, so that a certain degree of pressure was required to ascertain its presence. If there is a little effusion in the tunica vaginalis, it is of a passive character, and gives way gradually as the principal affection is receding. The progress of syphilitic orchitis is mostly slow, indolent, and ill-defined ; so much so that patients, as before mentioned, perceive the lesion only after it has existed five or six months. It may last six or ten years, and I cannot tell at what period the disease, left to itself, would stop. Syphilitic sarcocele never brings on suppuration ; whereas cancer, or the tubercular degeneration, are sure to produce it. Resolution is possible, and then the organ returns to its normal state ; sometimes, however, there is a rapid re-absorption of the plastic matter after the testis has attained a certain volume, and atrophy is the ultimate result. I have known cases where the disease remained quite stationary when it had reached a certain point, and all the treatment employed could not make it recede one inch. In such a case, the spermatic vessels are replaced by a nodulated tissue, which appears

entirely to annihilate them. The fibro-plastic degeneration may become cartilage; and I have seen cases where an osseous shell was formed around the organ. It is quite indispensable to be aware of all these different modifications, in order to be able to adopt a rational line of treatment, and not to attribute to the inefficacy of the remedies we employ, that want of success which depends mainly on the peculiar kind of lesion which we have to treat. In all these cases of degeneration, the spermatic secretion is less abundant, the number of spermatozoa diminishes as the lesion becomes more extensive, and the fluid which is looked upon as semen is no more than prostatic mucus."

HISTOLOGICAL CHARACTER OF THESE INTERSTITIAL DEPOSITS.—Among others M. Virchow, of Berlin, has minutely examined these deposits. "The syphilitic orchitis commences," he says, "by an interstitial deposit. The free portion of the testicle is first attacked, the tunica albuginea then becomes thickened, the inflammation extends along the seminal tubes, forming radiating cords till it reaches the vessels of the testis, which it leaves unaffected in the large majority of cases."

The whole of the external layer of the testicle is not always affected. The inflammation attacks only certain cones of the testis, particularly the middle ones. At first, a true "work of proliferation" (cell-development) takes place among the seminal tubes, which hitherto have remained unaffected, as well as in the interstitial tissue. The hyperemia is not intense.



Fig. 1.

Section of testicle attacked with simple syphilitic induration, magnified twenty-four diameters. The seminal tubes are folded on themselves. Their epithelium is pigmented, and has undergone a fatty metamorphosis. Their walls are thickened. Between the tubes there is a very close and fibrous deposit of new formation.

The interstitial tissue becomes converted into a soft red mass, which under the microscope appears to be conjunctive-tissue, very full of nodules. This mass becomes thickened, and then assumes a fibrous aspect, with a bluish white tint. It is seen between the seminal tubes, separating them one from the other. The walls of the seminal tubes become thickened, and ultimately coalesce with the interstitial tissue. The epithelium of the tubes, in which a brown-black pigment has been developed, is ultimately destroyed, and becomes metamorphosed into fat. (Fig. 1.) Lastly, the seminal tubes become completely atrophied, and towards the close of the complaint the affected part forms a cone of a tolerably firm and fibrous

aspect. The testicle shrinks within itself according to the direction of the cone.

When the induration is very extensive, the testis diminishes considerably in size. When the induration is limited or lobulated, a sort of depression, looking like a cicatrix, appears on the surface, beneath which the tunica albuginea becomes thickened. In some cases it is united to the tunica vaginalis, by fibrous bands looking like ligaments. The epididymis is almost always unaffected.

SPECIFIC SWELLING OR GUMMATA.—Amidst these indurated semi-tendinous masses in the tunica albuginea, and in the very substance of the testicle, one or two swellings may make their appearance somewhat harder in consistence than the surrounding tissue. Sometimes these will remain isolated, in other instances they may unite one with the other. They vary in size from that of a millet seed to that of a cherry. They are round, nipple-shaped, or sometimes angular, homogeneous, dry and hard. Sometimes they look like a yellow tubercle, differing however in containing little grey miliary tubercles. These last precede and always accompany (I think so at least) the true tubercle of the testicle.

In this form of *gummous orchitis* we find, especially in cases when the complaint is not too far advanced, a reddish areola formed by a softish tissue, less dense than the *gumma* which surrounds it, and traversed by vessels visible to the naked eye. This is finally lost in the indurated tissue, in the middle of which the *gumma* is developed.

In cases where the affection has made greater progress we notice the indurated tissue surrounding the whole substance of the *gumma*, and forming around it a sort of capsule from which it can only be separated artificially. Microscopical examination, as seen in Fig. 2, shows in these *gummata*, if we exclude the callous tissue—*three* different zones—*First*. On the external surface (A) of the *gumma*, we notice a conjunctive tissue, which is very vascular, and consequently appears red. This tissue is filled with undeveloped cell elements, and has evidently undergone that pathological evolution of granulation which I have designated by the term *Proliferation*. *Secondly*. Within the first we find a narrower layer (B) hardly to be detected by the naked eye; this layer undergoes the fatty metamorphosis; the incipient cells of the external layer augment in volume; they become transformed into granular fatty globules, which, crowded one against the other, surround the periphery of the yellow nodule. *Thirdly*. The central zone or part (C) consists of the yellow nodule itself; this pathological production is similar to the yellow mass found in the *gumma* of the periosteum, page 518. In the substance of its tissue can be distinguished some ill-defined fibrous bundles, which are composed of a mass of cells undergoing the fatty metamorphosis.

The fatty granules form here and there rounded masses; but generally these granules (the remains of cells that have undergone the fatty metamorphosis) become decomposed and disintegrated. When the disease has reached a further stage, the layer of granulation is absent, and is replaced by a mass of conjunctive sclerotised tissue, resembling fibro-cartilage or the tissue of the cornea, possessing the fusiform cells, which are separated the one from the other by thick

layers of a homogeneous finely striated substance. In the peripheric portions of the gummous tumour the cells augment in volume, become elongated and undergo the fatty metamorphosis, exactly similar to what happens in the atheromatous productions of the arterial system. All around the yellow matter we find large granular cells closely pressed one against the other, and I have seen in more than one instance crystals of cholesterine. Lastly, in the interior, we also find



Fig. 2.

Lateral section of a gummous tumour of the tunica albuginea, magnified 300 diameters.

- A. Conjunctive sclerotised tissue of the enveloping layer, with the fibre cells (corpuscles of conjunctive tissue) disposed in parallel lines.
 B. These cells undergoing fatty metamorphosis and augmentation of volume.
 C. D. The cells transformed into granular globules around the caseous layer. This last is formed by a mass of little fusiform or round cells. These masses enlarge and anastomose. In the intervals existing between them, we see a scanty fibrous tissue.

an immense quantity of small cells very closely pressed one against the other, having undergone to a greater or less extent the fatty metamorphosis and forming often large tracts which anastomose with one another. (See Fig. 2.)

This is an example of fatty transformation of an organized tissue, and it is evidently the proliferent and cell-developed layer of the conjunctive tissue which undergoes this metamorphosis. My opinion then differs from that of Billroth* who sees in this pathological evolution an *interstitial buffy exudation* analogous to croupal and diphtheritic exudations. These last so often accompany primary and secondary syphilitic ulcerations, that they may well, according to Billroth, be met with also in tertiary symptoms. Nevertheless, these croupal exudations do not generally show themselves in simple syphilis; diphtheria is a case altogether exceptional, and which, as far as my experience goes, has not been substantiated during the course of syphilitic affections, except on ulcerated surfaces.† Diphtheritic tubercles, which have the power of lasting

* "Cellular Pathology," page 323, Fig. 118.

† "Beiträge zur Pathologischen Histologie." Berlin. 1858. p. 63.

during months, and perhaps years, and remain as solid masses in the human body, do not accord with the recognised peculiarities of syphilis. All these facts assist us in combating the opinions of Billroth, who forgets the essentially gangrenous nature of diphtheria. Ricord was right when he described this affection as plastic; so the drawings which he gives in his "*Iconographique*," Plate xxxix., exhibit perfectly simple induration as well as the gummous production.

To return to M. Ricord's account of syphilitic sarcocele—

DIAGNOSIS.—"The affections which may be confounded with syphilitic sarcocele are *tubercles*, *cancer*, and some *idiopathic diseases* of the testicles. As for *blennorrhagic epididymitis*, I can hardly understand how any mistake can have arisen with regard to it. I will not say a word about hernia, varicocele, and simple hydrocele; for their characteristics are too opposed to those of the plastic sarcocele to allow of any error being committed. The blennorrhagic affection of the testicle is always preceded by blennorrhagia, and has its seat in the epididymis; as a general rule, we may say that the vas deferens suffers likewise; the body of the testis is seldom attacked, and always subsequently to the affection of the epididymis; the progress of the disease is acute and well-defined; its duration is limited; and the simplest remedies—viz., antiphlogistics, emollient applications, and resolvents cure it; it may affect both testicles, but rather successively than simultaneously.

But if it is an easy matter to distinguish epididymitis from syphilitic sarcocele, it is rather more difficult to establish clear distinctions between the latter and *tubercular or cancerous sarcocele*; yet if the characteristics of the three affections be compared, the diagnosis can be pretty accurately arrived at. As for the hereditary taint, it may exist in the antecedents of each of the three diseases to which I am now alluding—viz., tubercle, cancer, and syphilis. Syphilitic sarcocele may come on very early in life, but I have never noticed it before puberty. Tubercular sarcocele is also a disease of youth; it mostly comes on towards twenty or twenty-five. Of course there is hardly any limit for the syphilitic affection of the testicle; it may attack patients of thirty or forty years of age, and more. Cancer seldom appears in this region before thirty.

Now, if we wish to inquire into the usual history of these three diseases, we shall find that the tubercular or cancerous testicle has constantly recognisable antecedents. It is true that accidental blows and repeated blennorrhagic attacks may provoke the development of tubercles in this organ, but these are mostly exciting causes, which attract the attention of patients to an affection which had long been latent. As for the syphilitic sarcocele, it is often easy to retrace the chain of symptoms to the primary accident, which has been the starting point of all the phenomena. Syphilitic sarcocele occupies distinctly the body of the testicle, whilst the tubercular disease generally begins with the epididymis; the body of the testis is indeed sometimes involved in the latter affection, but the epididymis invariably suffers first, and, besides, an additional sign of the tubercular character is, that the vas deferens and the prostate gland always participate in the mischief; whereas the vas deferens is never affected in syphilitic sarcocele.

Cancerous sarcocele generally begins in the body of the testis, and the cord may suffer also; it is not, however, the whole vas deferens which is attacked in this affection of the cord, but its vascular elements only—viz., lymphatics, veins, &c. The vas deferens never becomes involved, except when the cancer is complicated with tubercles.

“Now let us glance at the *progress* of these three diseases. They all three begin in a very indolent manner. Two of them, the tubercular and the cancerous sarcocele, become painful as they proceed, whereas the syphilitic, which may have given a little pain at the beginning, becomes more and more indolent as it advances, and the affected testis ceases at last to have any sensibility whatever. If we inquire about the diverse forms which these diseases will assume, we shall find that both the syphilitic and tubercular sarcocele may, at the outset, present similar inequalities, but cancer is regular and uniform from the very beginning. The syphilitic sarcocele, which might have been very nodulated at the outset, tends gradually, as it goes on, to uniformity of shape; it becomes, in fact, homogeneous, as the plastic effusion begins to surround the whole body of the testis; it then assumes the pyriform shape; and this symptom is so well known that pathologists have given it as a pathognomonic sign of syphilitic sarcocele; the tubercular sarcocele becomes more nodulated as it grows, and the cancerous just the same. Syphilitic sarcocele is sometimes painful at the outset; the testis feels heavy and dragging, but is less annoying as the disease goes on; the tubercular sarcocele begins indolently, but becomes very painful when it gets soft; the cancerous causes lancinating pains, and gradually softens down. The tubercular affection will inevitably suppurate; the cancerous will ulcerate, then secrete pus, turn fungous, and invade the neighbouring parts. The syphilitic sarcocele never suppurates, and when it has lasted a certain time, its size diminishes; or the tumour may remain stationary, and undergo a fibrous, fibro-cartilaginous, or osseous transformation. There is a very interesting difference between the tubercular and syphilitic sarcocele, with regard to their respective tendency to involve neighbouring parts. The morbid influence of tubercular sarcocele may run along the inguinal region, ascend through the vessels, and proceed in the direction of the vertebræ, from one lumbar lymphatic gland to another, whereas the syphilitic sarcocele never leaves the testicle. Further, as to contemporaneous affections of the viscera, I need hardly say that the tubercular sarcocele is likely to co-exist with tubercles in the lungs; that the cancerous is often perfectly independent of any carcinomatous affection in other parts of the economy, and that the syphilitic will mostly be accompanied by sundry symptoms of a tertiary nature, which will be of great assistance for the diagnosis.

“We also derive much information from the fact of both testicles being affected simultaneously, or one testis only being attacked. Tubercular sarcocele almost invariably occupies both organs; so does syphilitic sarcocele; but the cancerous is confined to one testis only. The *duration* of tubercular and cancerous sarcocele is indefinite, but when the syphilitic has reached a certain period, it stops short, and

then decreases, disappears altogether by absorption, or degenerates into ivory exostosis or eburnation.

“Formerly, very little trouble used to be taken as to the diagnosis of these various affections of the testes, and when a practitioner was puzzled about the nature of a tumour in the scrotum, the mercurial treatment was resorted to in order to ascertain whether it was of a syphilitic nature or not. But it is rather dangerous to give depressing medicines to patients who may be phthisical, and it is, besides, very likely that this mode of investigation may often prove a total failure. But in our times we have an excellent touchstone in the iodide of potassium, the effect of which upon tertiary symptoms is far more conclusive than the former modes of distinction. I must not omit to mention that there are cases of idiopathic orchitis which resemble syphilitic orchitis very much, both in shape and progress, but as there is no sort of inconvenience in giving the iodide of potassium, there can be no harm in resorting to it in order to set the question at rest.

PROGNOSIS.—“Syphilitic degeneration of the testicle is not an affection that endangers the patient's life. But as it produces certain peculiar and very disagreeable modifications of the organ, it becomes rather a serious matter. The prognosis will greatly vary according to the time when the treatment is begun. It may, in general, be said, that the more recent and circumscribed the syphilitic degeneration is (and consequently, less likely to become organized), the less serious it is. If, however, whilst the patient is being treated, and resolution is going on, the hard nuclei are noticed to retain their induration, the ultimate result should then be looked upon with distrust; for in many of these cases there is a total destruction of the substance of the testicle, and actual atrophy has already begun. But if, on the contrary, the normal consistence and elasticity return in proportion as the resolution proceeds, the prognosis should be favourable. When syphilitic sarcocele has reached a certain period, the plastic effusion may become organized, and therapeutical means have then no longer any power over it; and it would, in such circumstances, be perfectly useless to persevere in the treatment. The rule laid down for the diseases of bone holds good in this stage of the testicular affection; for you all know that no applications in the world could promote the resolution of an ivory exostosis. In the disease which occupies us, the organization of the effused lymph, the conversion into cartilage, and the degeneration, correspond, in some manner, to the stages which, in the diseases of bone, lead to ivory exostosis.”

TREATMENT.—We have stated above, that the syphilitic affection of the testicle was a symptom of transition from secondary to tertiary syphilis; we must consequently employ the treatment applicable to those two periods of the affection—namely, mercury (see page 418), together with the iodide of potassium (see page 478). I consider the combined use of these remedies better than their administration singly. I have often seen the iodide very slow in bringing about resolution, which the use of mercury has expedited.

M. Ricord says, “You must be careful to modify the treatment just

described according to certain peculiar manifestations. For instance, when you have to deal with syphilitic sarcocoele, which is exempt from complications, it will be sufficient to use the general treatment. But when there is much inflammation, you must have recourse to antiphlogistics and emollient applications; and if it were noticed that the testicle is suffering both from syphilis and struma, antiscrofulous remedies should be added to the usual treatment of such cases. The plastic effusion will be efficiently controlled by rubbing the part with the mercurial ointment, and covering the whole with a soothing cataplasm; and much benefit will likewise be derived in these cases from methodical compression with strips of plaster." (See p. 163.)

In the chronic cases great benefit will result from applying the blue ointment to the scrotum, then covering the organ with a piece of flannel and enveloping the whole with oil silk, at the same time supporting it by a suspensory bandage. By this means rapid resolution of the enlargement sometimes takes place, particularly if iodide of potassium be given at the same time.

GUMMATA, OR SYPHILITIC TUBERCLES IN THE SCROTUM.

I may briefly mention the elastic tumours which arise in the substance of the scrotum itself, and which, commencing as they do in the cellular tissue, not unfrequently implicate the testicle, and are frequently mistaken for affections of that organ.

A full description of them has been already given in the form of a quotation from a lecture by M. Ricord at p 474.

TREATMENT.—The best practice is to open these elastic tumours as soon as fluctuation is detected, and to have recourse to sedative applications when you perceive that they are surrounded by an inflammatory areola. But when the ulceration presents no redness, nor any symptoms of irritation, a very good lotion may be made with a solution of iodine, in the proportion of one half or a drachm to twelve ounces of distilled water; and when this solution is being prepared, a certain quantity of iodide of potassium should be added, to render the iodine more soluble. If the granulations of the tertiary ulcerations are too prominent, they should be destroyed with the Vienna paste, or any other caustic.

General Treatment, however, is now found to be the most successful, and as microscopic anatomy proves that the cellular tissue of the scrotum has undergone the pathological changes described at page 485, the general treatment must be similar to that recommended at page 489 for syphilitic affection of the testes.

SYPHILITIC TUBERCLES OF THE SKIN.

"Syphilitic tubercle is a symptom," says Ricord, "which makes its appearance towards the decline of the very latest eruptions, and is seated in the substance of the skin; it looks very much as if the tubercle were attached to the inner surface of the integuments, and projected inwards; it has much tendency to involve the subcutaneous

cellular tissue. This tubercle may remain perfectly dry, and cause merely desquamation of the epidermis, or it may turn into a pustule, and take the form of ecthyma or rupia. Suppuration being once thoroughly established within it, the tubercle breaks, the matter is set free, and a deep ulceration remains. The sore has generally very sharp margins, its bottom is pultaceous and yellowish grey; it is perfectly circumscribed, and has all the characters of a primary chancre; so much so, that nothing but its inaptness to yield inoculable matter can distinguish it from the latter. These tertiary ulcerations may become serpiginous, and thus extend pretty far, but the phagedenic tendency is no longer the same; it is much less violent than in primary sores."—(*Lancet*, vol. i., 1848, p. 437.)

LOCAL TREATMENT.—It is unnecessary again to remind the reader that any inflammatory symptoms should be combated by antiphlogistic measures adapted to the condition of the patient. When all such symptoms have ceased, the tumour, at its commencement, or even when fluctuation is perceptible (provided the skin has not become discoloured), should be covered with a blister, and the denuded skin may then be dressed with a solution of iodine. The iodine acts as a local irritant, and is far preferable to the solution of corrosive sublimate, as it may produce beneficial effects both locally and generally. Usually, after the first blister, the tumour will be sensibly diminished; in such cases a second and, if necessary, a third should be made use of, until complete resolution is effected. Hardly any cases resist this method when they have been treated sufficiently early, and when the constitution has been supported by the general means spoken of above. When, together with distinct fluctuation, there is discoloration of the skin over the tumour, it is useless to attempt this plan of resolution; the pus may be allowed to escape by puncture, and should the hard shell mentioned as surrounding the cyst be present, the cure will be often expedited by its excision. When called upon to treat those cases which assume, at a later period, a fistulous character, and are surrounded with an indurated margin, their local appearance may be benefited by covering the surface with the following application:

Mellis	3vi.
Hydrarg. Protiodidi	3js.

The same effects will be obtained if the margin of the ulcer be touched with the solution of iodine, which is thus composed:

Tinct. Iodinii	3ij.
Aquæ destillatæ	3viiij.

The latter preparation is particularly useful in cases where no induration exists; these chronic ulcerations will slowly cicatrize, and their edges rise to the level of the surrounding skin. This may be often hastened by the application of strips of the plaster of ammoniacum and mercury. A treatment with alternate *sedatives* and *stimulants* may likewise often be employed with advantage.

SYPHILITIC TUBERCLES IN MUCOUS MEMBRANES.

These affections may be best studied in the throat. In persons of shattered constitution, or reduced by the combined effects of dissipation and bad treatment, some pain is felt in the throat or tongue; there is a thickness of the speech, which at first excites but little attention. On examining the affected parts, the medical man will not fail to observe more or less redness and swelling confined to a particular portion of the mucous membrane as if a tubercle was forming in the submucous cellular tissue; this point will soon take on an erysipelatous redness, break, and expose a tawny-coloured slough. (See Plate VIII. Fig. 2.) A probe will detect the extent of the ulceration, which, if situated on the back of the pharynx, may expose the bone, having previously destroyed the periosteum; when seated on the roof of the palate, a portion of the bone will be found to be carious, and a communication to exist between the nose and mouth; the peculiar foetid smell will, moreover, convince the surgeon of the destruction of the bone, of which large portions often come away. The disease, however, does not seem confined to the mouth; in a great number of cases an erysipelatous redness and thickening is perceived at the back of the nose, not, however, larger than a shilling in circumference; these gummata pursue the same course as on the palate, break and expose the diseased bones. Not unfrequently pustular eruptions, forming scabs like those of rupia, appear on the extremities, and the general emaciation continues; the countenance has now a cadaverous appearance, and the pulse bespeaks the general feebleness of the patient, who, if not relieved by proper treatment, sinks under the combined effects of colliquative sweats, diarrhoea, great suppuration, want of sleep from severe pain in the bones and joints, and loss of appetite. Such, I believe, is an accurate, though concise sketch of the most frequent form of tertiary syphilitic tubercular sore throat, with its accompanying symptoms, which are not to be mistaken when once witnessed.

In other cases the patient perceives little lumps gradually form in the substance of the tongue, which becomes irregular on its surface. To the feel, these little tumours are very hard and elastic, varying in size from that of a pea to a hazel nut. At first they are chronic in their progress, but afterwards become soft, suppurate, and open by fissures; the edges are often everted and indurated; livid chasms run in a perpendicular or transverse direction on the tongue, which is covered with a viscid secretion; the organ is very much fettered in its movements from its increase in size, and deglutition and articulation are interfered with.

Although one or other of these forms may be found alone as above described, cases are met with in which they occur together; more frequently, however, one form predominates, thus showing that they are varieties of one and the same stage of syphilis, a fact which I shall not further attempt to prove.

PATHOLOGICAL ANATOMY.—I need add nothing on this subject to what has been already stated in speaking of the gummata as observed

in the tertiary syphilitic affection in the testicle (see p. 484), where their microscopic character is explained at length.

DIAGNOSIS.—Few of my readers will be at a loss to distinguish between a primary sore on the mouth or throat, and the affection I am now describing, as inoculation and the history of the two complaints will assist them. If, however, phagedena or inflammation attack the throat, the diagnosis will for the moment be difficult.

When the mouth or throat presents the superficial excoriated condition of the mucous membrane (described at p. 448), which ultimately becomes extensively but not deeply ulcerated; when this character has been preceded by a chancre for some two or three months, and is attended with the scaly or tubercular papular eruption, together with condylomata on the scrotum or vulva, and little impairment of the general health, the surgeon will not, I should think, have much difficulty in distinguishing this as a syphilitic affection, and will justly style it the *secondary* form of sore throat. (See Plate VIII. Fig. 1.)

If, on the other hand, the disease, commencing in the submucous cellular tissue, periosteum, or bony structure, ultimately destroys the mucous membrane of the mouth or throat, giving rise to a deep excavated tawny ulceration, or if tubercles form in the substance of the tongue, which cause rents and ugly transverse fissures in that organ; if, moreover, some two years have elapsed since the occurrence of the primary sores; and if, together with the above symptoms, rupia, and ill-conditioned sores occur on the extremities, together with an impaired condition of the general health, the practitioner will be in no doubt as to the nature of such an affection, and recognise it as a *tertiary* syphilitic affection.

The diagnosis between this form of tertiary syphilitic affection of the throat and scrofulous or scorbutic affections is not, however, so easy. The history of the case proves little; the present appearance of the sore throat affords only slight indications, and we must be guided by the circumstances of each individual case, as no general rules can be laid down.

The tubercles in the substance of the tongue may be, and have been, mistaken for cancer of that organ. The following indications may assist the young practitioner in his diagnosis. Previous to ulceration of the tubercles, I have noticed that the *number* and *position* of the indurated points are different in the two affections. Thus in cancer there is usually but one, in syphilis there are several. In cancer the disease is seated at the side of the tongue, close to the teeth, about opposite the first molar. In syphilis it is the dorsum of the tongue which is generally affected.

When the affection takes on an ulcerative character, the characteristic features of the two complaints become more marked. In syphilitic affections, the ulceration is covered with a dirty, foul secretion, and the glands in the neck are but slightly swollen. In cancerous affections the ulcers are clean, florid, looking as if they were about to throw out healthy granulations; yet weeks and months go on, and no restorative process is set up, and the glands in the neighbourhood become of that stony hardness so peculiar to cancer. I have been

able to place but little confidence in the general appearance of the patient, for in both affections a yellow cadaverous look is met with.

The cautious surgeon will, however, not hastily give an opinion until he has commenced the treatment. This is the best means of diagnosis, for I need not say, that the one can be only palliated. Happily surgery can triumph over the other.

TREATMENT.—The indications of treatment are few, and must present themselves at once to the mind of the reader from what has preceded. In the first place, every exciting cause must be removed which can in any way aggravate the complaint. In public practice, no sooner does the patient enter an hospital than the effects of a warm bed, nutritious diet, and abstinence from spirituous liquors, at once suffice to relieve many of the symptoms. The surgeon's next object is to reduce the local irritation; for this purpose a sedative mucilaginous gargle is very useful. It is seldom necessary to apply leeches to the angles of the jaws. Small doses of morphia will tend greatly to quiet that general irritability of system so frequently found combined with ulcerations of the throat; at the same time tonics, particularly the vegetable ones, with good, nutritious, unstimulating food, will be most efficacious. As the contact of the teeth with the ulcerating surfaces is very prejudicial, a layer of lead, such as is used by grocers, may be employed as a protective means; and it will be often necessary to attend to the state of the gums and teeth, for the tartar accumulated around them causes great local irritation. On the first symptoms of the appearance of suppuration, the cysts should be at once opened, and treated by emollient gargles.

When all these preparatory steps have been taken, the surgeon may commence the employment of that valuable remedy, the iodide of potassium, in the manner spoken of at p. 478, under the head of Treatment of Tertiary Symptoms. Its first effect is to increase all the secretions; the appetite also receives an impulse from its use. Its principal action, however, is on the ulcerations; the secretion is first checked, then altogether stopped; healthy granulations spring up in the centre of what was lately a slough, and often require to be checked by the nitrate of silver. In some of the more chronic cases a local stimulant is necessary; a gargle composed of iodine and water, in the proportions of ℥j. to ʒviij. of water, is often all that is required, or the edges of the ulcer may be touched with the tincture of iodine. The appearance of the throat after cicatrization is very curious; bridles of a thick mucous membrane, of a peculiar *mother-of-pearl* white, are seen running in different directions, which differ much from the surrounding mucous membrane. To the uninitiated these white bridles look like so many patches of lymph, and in my early practice I have often endeavoured to remove them with a probe.

This is the usual rapid progress of the cure. Instances, however, occur sometimes which cause the surgeon to despair; the local irritation does not diminish, and no attempt at cicatrization is observed. In such cases the presence of a portion of dead bone may be suspected, and can usually be detected by a probe: as long as this remains, it will cause mischief; it should be removed with caution as soon as it can

be detached ; for however efficacious the hyodriodate of potash may be, it cannot produce absorption of a dead portion of bone. The forceps of the surgeon must be employed to get rid of it, and the case will go on prosperously afterwards.

When complete cicatrization has occurred, the deformity that remains is often considerable, though not to such an extent as may have been expected. The speech of the patient may be somewhat indistinct, in consequence of those bridges of mucous membrane above spoken of, and if a communication exist between the palate and nose, that peculiar nasal twang betrays the nature of the accident. These are permanent defects that medicine cannot cure, but various mechanical contrivances, called obturators, may be employed with considerable success.

As regards any operation for the purpose of bringing the sides of these fissures together, it should never be sanctioned ; the tissues around are not highly organized, and union by the first intention will not take place ; the knife detects a lardaceous structure, which readily sloughs ; so that all rhinoplastic operations are now given up, more especially as great relief may be obtained from the obturators.

As these cases are fortunately now of rare occurrence, it will be well to give the particulars of one or two instances to show how far the resources of our art can go in relieving these consequences of the complaint.

Disease of the Bones of the Nose and Palate.—In October, 1856, I met Dr. Quain in consultation on the case of a young lieutenant in the navy, who, on removing a couple of pledgets of cotton from the roof of the mouth, showed me two large openings without any surrounding ulceration. There was a bridge of mucous membrane between them, which was perforated with a small hole. There was considerable redness of the palate, and behind a large portion of denuded bone could be seen, which by the probe was found to be perfectly detached. At first I felt anxious to crush the bone, but this was impossible ; so I determined to divide the little septum, and extracted a considerable portion of the vomer without difficulty by bringing it out edgewise forward. It is worthy of note that the edges of the wound did not retract. The division was made in the mesial line. I ordered the patient to keep quiet, and not to eat for that day, and then only to take fluid food.

History.—My patient was a light-haired man, who contracted chancre some years ago on his way to the Cape. This was followed by secondary symptoms, on the subsidence of which he remained quite well until about a year or fourteen months ago, when a running from the nose commenced, and within two months several pieces of the ethmoid bones came away. He had recently taken iodide of mercury and iodide of potassium, the latter in fifteen-grain doses three times a day. He was a married man with three children, all healthy, and there were no traces of syphilis in wife or children.

We prescribed the syrup of the iodide of iron with quassia, good diet, and plenty of fresh air.

In a few days the local irritation had ceased, and I showed my patient how to make a temporary obturator, by placing the crumb of

new bread or bun in the opening. A few days later I instructed him to make an obturator with gutta percha ; he has since had comparative comfort, and his health had steadily improved.

Method of making Gutta Percha Obturators.—I may here describe how to do this. Having placed a little saucer of water on its stand over a spirit-lamp, boil a piece of gutta percha about as large as the opening ; and when perfectly soft, manipulate it so as to make it in shape resemble the opening that has to be closed. To prevent it coming out, make its upper and front border somewhat into the form of a blunt hook, which lies on the upper floor of the nose. It may be necessary to boil the gutta percha several times, as it soon gets cold, and cannot then be moulded. A common lamp will do when a spirit-lamp cannot be had. I think this gutta-percha obturator decidedly the best ; it fixes itself firmly in the opening, perfectly excluding any foreign substances, and enables the patient to speak and eat with comparative comfort. I may mention that these obturators should be removed from time to time, in order to wash them, which should be done daily. They should also at first be taken out at night ; indeed so long as there is much irritation produced, they should only be allowed to remain *in situ* when eating or speaking. The same gutta percha may be used, until it becomes brittle,* which it will do after a time. I believe there is great difference in the quality of the samples, some being quite worthless and soon decomposing. After a time the opening in the palate will gradually contract. I have seen it do so in some cases till it was only large enough to admit a pin ; when this has happened, I have touched the orifice with pure nitric acid, but I have not usually obtained a complete closure of the opening. The obturator will of course have to be made smaller and smaller as the opening contracts. Some of my patients thinking that the obturator might preclude the perfect closure of the opening, have had gold obturator plates made, resting on the crowns of the teeth, but the results have not been successful in perfectly closing the aperture. On the whole, I think patients find the greatest comfort from the simple contrivance with gutta percha which I have described.

Before quitting the subject of tertiary affections of the throat, I would call the attention of my readers to a chronic affection of the throat, which is sometimes a consequence of tertiary syphilis. I do not think it has yet been noticed by authors. This may arise from

* In a communication to the *Times* Sir W. B. O'Shaughnessy makes the following remarks on the subject :—

"The change in the gutta percha from the plastic to the brittle state is the effect of oxidation. This is proved by an elaborate series of analyses made, at my request, by Professor Hoffman, of the Royal College of Chymistry, on samples of the gutta percha which had been altered in India.

"Gutta percha in its natural state contains—

Carbon	88.10
Hydrogen	12.40

"When altered by prolonged heat and keeping (this in cases not even once opened) two substances are formed, containing—

	No. 1.	No. 2.
Carbon	62.79	67.70
Hydrogen	9.29	10.09
Oxygen	27.92	22.20

its being perhaps rather a consequence of the affection than a complaint itself.

I am attending now (1860) a distinguished American sent to me by Dr. Parker, of New York, who suffers from dryness of the back of the throat. The history he gives is, that years ago he suffered from chancre, followed by secondary symptoms, which relapsed several times, and produced severe affections of the throat. These have been well some years, but every now and then he feels a huskiness and dryness of the throat which is very uncomfortable.

On looking into the throat no actual disease can be detected, but the mucous membrane, instead of being moist, red, soft, and pliable, is dry, of a mother-of-pearl colour, firm and dense, like parchment stretched across a drum-head. There is apparently little or no secretion, and indeed the membrane has ceased apparently to be true mucous membrane. This, then, is an exaggerated instance of absorption of the sub-mucous and inter-cellular tissue, which in this situation gives rise to the preceding symptoms ; in fact, the present covering of the throat is only cicatricial, and hence the absence of secretion. This state of cicatrix has been above described at page 485, but I do not think I ever saw so marked an instance. Science here teaches us, not how to remove this (for that is impossible), but to abstain from doing too much. I have found that by desiring my patient to suck delectable jujubes from time to time, the mouth, by the increased secretion of saliva, supplies the moisture that the throat is unable to provide. In the early stages when I first saw this patient I gave iodide of potash, but subsequently left it off. But I still give it to him now and then as a precautionary measure, in the form of the syrup. I think contingencies should be provided against ; for no one can say what injury might happen were this cicatrized mucous membrane to take on an unhealthy action.

TERTIARY SYPHILITIC AFFECTIONS OF THE LARYNX.

M. Ricord, in one of his lectures, gives his experience on this complaint :—"I will attempt a sketch of the state of the *larynx* when thus attacked. The first symptoms are, in such a case, a gradually increasing difficulty of phonation, which may go so far as to produce a total extinction of voice ; but when suppuration comes on, we have all the consequences of chronic laryngitis, and even of phthisis laryngea—viz., purulent or muco-purulent expectoration, dysphonia, or total aphonia, the detachment and expectoration of the bones, or cartilages of the larynx, and the occurrence of aërial fistulæ. But these symptoms, which apparently are extremely serious at the very outset, are far less important than they become towards the end of the disease ; for at the beginning the dysphonia and aphonia are merely symptoms of compression or obstruction ; and since a judicious treatment can modify this state of things without any loss of substance taking place, the organ may regain its normal vigour. But when the disease has made further progress, the phenomena then perceptible are the result of the destruction of several parts of the larynx, the treatment then can

promote the healing up of the ulcers, but cannot restore the parts of the organ which have been loosened and expectorated."

In all these cases iodide of potassium should be at once prescribed, as it will act as a preventive; but if once real mischief has taken place, the disease may be arrested, it is true, but the local alterations cannot be remedied.

TERTIARY SYPHILITIC AFFECTIONS OF THE LUNGS.

Many authors, particularly Morton, Sauvage, Portal, Morgagni, and more recently, Drs. Graves, Stokes, and Munk, have related cases and described diseases which they have classed under the term syphilitic pulmonary disease. The latter of these authors observes, "Syphilis displays itself in the lung, under the varied forms of bronchitis, pneumonia, or broncho-pneumonia."—(*Medical Gazette*, 1841, p. 182.)

Dr. Stokes says (page 93), "With respect to the bronchial system, we may observe the disease as an acute or more chronic affection. In the first instance it is analogous to the bronchial irritation of the exanthemata, of which I have seen a few interesting examples; while in the second there is a chronic irritation, which, when combined with the syphilitic hectic, and with periostitis of the chest, closely resembles true pulmonary phthisis. In the first of these cases I have observed, that after a period from the first contamination, the duration of which has not been determined, the patient falls into a feverish state, and presents the symptoms and signs of an irritation of the bronchial membrane. These having continued for a few days, a copious eruption of a brownish-red colour makes its appearance on the skin, and the internal affection either altogether subsides or becomes singularly lessened. Here we see the bronchial membrane taking on an action which is peculiar, and very different from its ordinary irritations. There is an inflammation only analogous to that of the exanthemata, and no doubt can exist that it is connected with the syphilitic poison. My friend Dr. Byrne, whose situation as medical officer of the Lock Hospital gives him the greatest opportunities of observation, informs me that he has in many instances seen patients who had been formerly diseased, and who had come into hospital either for new sores or for gonorrhœa, attacked with intense bronchitis and fever. This attack would come on suddenly, and the distress was so great that bleeding had to be performed; the effect of which was, that soon after, a copious eruption, often combining the lichenous and squamous forms, made its appearance, with complete relief to the chest. In some of these patients on the day before the eruption, the stethoscopic signs had been those of the most intense mucous irritation, and yet when the skin disease appeared *the respiration became either perfectly pure*, or only mixed with an occasional rhonchus in the large tubes. The same gentleman has observed the reverse of this; as, when a syphilitic eruption has been repressed, the bronchial membrane has become much engaged, and the patient affected with general febrile symptoms. These phenomena subsided after bleeding and mild diaphoretics, which had the effect of restoring

the cutaneous eruption. Here we have an additional evidence in favour of the analogy between syphilitic bronchitis and that of the exanthemata."—"Diseases of the Chest," p. 93.)

Dr. Munk says, "The chronic form of the complaint is in all respects the most interesting and the most important. It is the most usual form under which syphilitic bronchitis presents itself; and, when combined with some other morbid conditions often consequent upon the existence of the syphilitic poison in the system, is exceedingly likely to be mistaken for true phthisis, and thus to lead to an unnecessarily bad prognosis, and to be both incorrectly and inefficiently treated.

"As secondary symptoms in general may show themselves at very different periods from the primary contamination, so may chronic syphilitic bronchitis originate at short or distant intervals from the original attack. Its order of occurrence, in relation to other secondary phenomena, cannot, I believe, in the present state of our knowledge, be positively indicated: but the observations I have hitherto made tend to show that it is most usually observed late in the series. I have known it take precedence of the affection of the throat; but far more frequently it succeeds to this, the morbid action creeping gradually and slowly along the larynx and trachea into the bronchial tubes. In such cases, the attack presents many of the phenomena, and follows much the same course, as common catarrh."

—(*Loc cit.*, p. 182, 218.)

Dr. Graves, addressing his pupils of the Meath Hospital, on the subject of syphilitic pulmonary disease, asks, "How are you to recognise it? Mainly by the history of the disease. If the patient's sufferings have commenced at a period of time after primary sores on the genitals, when secondary symptoms usually make their appearance; if some of his complaints are clearly traceable to this source; if, along with debility, night sweats, emaciation, nervous irritability, and broken rest at night, we find cough; and if this group of symptoms have associated themselves with others, evidently syphilitic, such as periostitis, sore throat, and eruption on the skin, then may we with confidence refer all to the same origin, and may look upon the patient as labouring under a syphilitic cachexia affecting the lungs as well as the other parts.

"We must not draw our conclusion until we have repeatedly examined the chest by auscultation and percussion; if these fail to detect any tangible signs of tubercles, we may then proceed to act upon our decision with greater confidence, and may advise a sufficient, but cautious, use of mercury."

My own observations on large numbers of syphilitic patients suffering under secondary symptoms, in no way corroborate these opinions. I am unaware of having observed cases of acute bronchitis or pneumonia coming on during the course of secondary symptoms. That these affections may occasionally complicate the above complaints, no doubt can exist, but they do not appear to bear the relation of cause and effect. And in fact, as has been noticed at page 409, during the existence of secondary symptoms, fever or affection of the chest is absent in ninety-nine out of every hundred cases of secondary symp-

toms. Surely, did they exist, they must have been noticed by M. Ricord, and the accurate observers that have studied syphilis in all its stages.

During my late visit to Paris I was present at a lecture of M. Ricord's on the subject of syphilitic phthisis. The professor of the Hôpital du Midi admits the existence of this disease, but not in the sense that the authorities quoted above do.* Syphilis, he thinks, does produce phthisis, "but," said he, carried away by his subject, as he often becomes in his lectures, "syphilis is the spur, and mercury is the whip, which hurries along the phthisical to their graves."

"The first instance I remember at this moment," added M. Ricord, "was the following, in which my judgment was for some time at fault. A watchmaker was seized with the symptoms of phthisis, pain, fever, cough, sweating, expectoration, attended with the auscultatory symptoms of tubercles; and I was induced to think it was a case of phthisis: but recollecting that here was a man in the prime of life, with no hereditary tendency to phthisis, suddenly seized with all the symptoms of that disease, a circumstance most unusual, and remembering that he had been treated for disease of the tibia, and that I had removed a testicle formerly, in the belief that it was cancerous, because it did not yield to mercury (this was before iodide of potassium had come into vogue), together with other tertiary symptoms, I thought I ought to employ the iodide; and now the patient is perfectly well."

To return, however, to syphilitic phthisis, no doubt can exist that at late periods of tertiary symptoms when gummata and syphilitic tubercles are forming in the cellular tissue, similar deposits may take place in the lungs, and suppuration ensue, giving rise to all the symptoms of a cavity. In a lecture reported in the *Lancet*, vol. i., 1848, M. Ricord says, "And here I must solemnly warn you not to confound the suppuration of a few syphilitic tubercles in the lungs with phthisis. In the latter disease I need not tell you what fate awaits the unfortunate sufferers; whereas the cure in the syphilitic affection is extremely probable, and the prognosis is anything but gloomy. You will be able to distinguish these affections by the history of the disease, the actual cutaneous manifestations, or even by the treatment."

Dr. MacCarthy, in his Thesis says, "These tumours (gummata) may be situated in the lung, as I witnessed in a fatal case. The softening and elimination of the syphilitic tubercle give rise to the stethoscopic signs of pulmonary phthisis, and the functional symptoms resemble those produced by insufficient respiration."—(P. 39.)

M. Ricord relates the following appearances, as found in the lungs of the patient whose disease proved fatal, and is delineated in Plate xxviii. of his "Clinique Iconographique:"—

"The lungs presented, on their lateral and posterior surfaces, violet-

* Dr. Stokes says (page 432), "Secondary syphilis simulates phthisis when the syphilitic hectic exists with the bronchial irritation which I have described. If, as is often the case, there be also periostitis of the ribs or sternum, the symptoms are almost identical."

coloured stains, beneath which were indurated kernels, which, on first looking at them, resembled those little masses of pneumonia which are found in the lung from purulent absorption.

"No pus was found in any of these masses, which, when divided, had the appearance of a dark-red tissue easily broken. In the left lung we observed five little foci or caverns, half filled with a whitish viscous matter, as well as a greyish pultaceous secretion, which appeared to come from the walls of the foci, and these last were soft and of a grey colour. The largest of these might be able to contain a small nut. They were situated close one to the other in the inferior portion, and close to the external border of the lung."

In the explanation of Plate xxix., Ricord says, "The lungs, which were healthy at their upper part, presented at their base several tubercular ulcerations as large as peas, and altogether analogous to those found in the heart—constituted of a yellow matter, hard, creaking under the edge of the bistoury, without any vascularity, of a schirrous consistence in some parts, and in others resembling tubercular matter which is becoming softened. In one word we found all the characters of the gumma, nodus or syphilitic tubercle—tertiary symptoms so often observed in the subcutaneous and submucous cellular tissue."

These cases, then, differ from syphilitic phthisis, but are often confounded with it.

It has often been stated that syphilis produces consumption? I think it might be said, with a great deal more truth, that consumptive individuals present the most severe cases of syphilis; still I am ready to admit, that when syphilis occurs in delicate persons, it may develop the seeds of scrofula, and in this it will be aided by the injudicious effects of mercury. I still, however, believe that the influence of syphilis in producing phthisis is much overrated, and in this opinion I am borne out by the returns of the Registrar-General. I have been at some pains to collect all the cases mentioned in the weekly reports in which the immediate cause of death was consumption with syphilis, and during the space of the three years, 1846-7-8, they amounted to only ten males and nine females.

If called upon to treat tertiary symptoms, I do not think that the fear of phthisis ought to deter us for a moment from prescribing the appropriate treatment. Patients with secondary symptoms are very often brought to me to decide if mercury may be given. An opinion has sprung up, and is very generally acted on even by the special physicians who treat consumption, that mercury should be withheld in delicate-looking individuals suffering from syphilis. They fear, it seems, to exaggerate the chest symptoms by giving the mercurial in secondary, or iodide of potash in tertiary symptoms.

As I have said before, if syphilis really exists, it must be first attacked, and until it is conquered, it is of no good attempting to build up the system by tonics or food.

I am glad to find that these views are now (1860) strongly corroborated by the recent microscopic investigations of Virchow. The deposits found in the lungs (as stated previously, page 484, in speaking of interstitial deposits in the testis), cannot be with any certainty

attributed to syphilis except when other well-marked tertiary symptoms of the disease coexist.

In regard to *treatment*, little need be said. When we have reason to suspect the existence of syphilitic tubercles in the lungs, recourse should be had to iodide of potassium, and mercury should be used most sparingly. When we have to deal with true syphilitic phthisis, the surgeon should treat the patient on general principles, and, notwithstanding the high position of Dr. Graves, I dissent from his recommendation of mercury, which I believe must be generally prejudicial. In the stage we are describing, iodide of potassium will do much, and I have great confidence in cod-liver oil; but some very peculiar circumstances must in my opinion arise to sanction the use of mercury, and it would be only after the failure of all other means that I should recommend the mineral. There is a case, however, detailed under the head of Syphilitic Cachexia (p. 526), showing that minute doses of corrosive sublimate may be of great service.

SYPHILITIC TUBERCLES OR GUMMATA IN MUSCLES.

In a lecture, reported in the *Lancet*, M. Ricord makes the following observations:—"As soon as this syphilitic degeneration begins, the muscular tissue, which seems to undergo a sort of coagulation, contracts; but this contraction is hardly noticeable as long as the muscle gets passively shorter. The phenomena which I have pointed out, as marking this affection in the testicle (p. 485), reappear in such a case. There is first a simple plastic degeneration, which may, by proper treatment, entirely disappear, without any sort of deformity being left behind; but if the disease is allowed to reach a more advanced stage, the result may be either a complete atrophy, through re-absorption, or a fibrous, fibro-cartilaginous, or osseous transformation. In the latter of these two cases there is shortening of the affected muscle. This degeneration generally attacks the flexor muscles, as, for instance, the biceps, &c. I have seen this plastic alteration situated in the anterior part of the leg, causing a flexion of the foot; I have also observed the same affection in the gastrocnemii. I remember a celebrated singer, who consulted me for such a syphilitic contraction of the biceps, which interfered with the proper action of his arms on the stage. The iodide of potassium was prescribed, and the case progressed so favourably, that complete resolution gradually ensued.

"This complaint is not at all painful, and the patients become aware of it merely by the difficulty they experience in performing the different motions of the limbs. I have seen, in the course of my practice, cases of complete atrophy of the flexor muscles of both legs. Since I have called the attention of the profession to this pathological alteration, a work has been published by M. Bouisson, of Montpellier, upon these plastic degenerations of muscles, consequent upon tertiary syphilis, for which no small praise is due to him."—(*Lancet*, vol. i., 1848.)

My readers will find a drawing of these deposits in Plate xxix. of M. Ricord's "*Iconographique*," as he met with them in the substance of the heart:—"The walls of the ventricles," he says, "presented in many places a tubercular-looking yellow matter, creaking when

divided, without vascularity, of a scirrhus consistence in some points, and in others analogous in appearance to tuberculous matter undergoing softening. In a word, we find all the characteristics of the nodules or tubercles of tertiary syphilis, which we often observe in the subcutaneous and submucous cellular tissue.

"Surrounding the whole of these morbid productions, we did not remark any pushing aside of the muscular fibres, for the muscular fibre itself had degenerated into this substance. We could, in fact, trace the evolution of this transformation, which seemed to have commenced by the blood combining with the fleshy fibre. In fact, the lesion still existed in that state in several points. In others, it presented a yellow colour, and had acquired a greater development in the centre, but at the circumference we detected the combination of blood with the fibre, which had been the origin of the complaint."

PATHOLOGICAL ANATOMY OF THESE TUMOURS IN MUSCLES.—This peculiar swelling in muscles has been recently microscopically examined by Virchow. He thinks that the gummosus tumour is not, as Ricord believed, the result of a transformation of the muscular tissue into the effused substance. It develops itself among the muscular elements, of which it contains the *debris* in larger or smaller quantities. The bare or raw exudation is wanting here as likewise in the inflammation of other muscles. It is unnecessary for me to go further into the subject, as this fatty degeneration has been already fully described at page 484, and I may here state, it is exactly similar, whether the fatty metamorphosis exists in the heart, in the muscles, or in the testis.

I have witnessed several cases in London of these tumours in muscles, particularly in the biceps; one such was lately under treatment in St. Bartholomew's Hospital. During my recent visit to Paris, I was fortunate enough to see a good specimen of tubercle or gummata in muscle. The history of the case is as follows: eight years ago a man contracted chancre, which did not become indurated; two years later, that is, six years since, he had a second infection; induration came on, he remained free from disease until two months ago, when a tubercle formed in the masseter, and another in the substance of the gastrocnemius; the limb became enormously enlarged, but had entirely subsided under the use of iodide of potassium, together with plasters of ammoniacum and mercury; the cheek recovered, but the masseter has not yet entirely gained its power.

TERTIARY AFFECTIONS OF THE FIBROUS TISSUES.

I may mention that sometimes the fibrous tissue of the penis undergoes a peculiar change from the influence of tertiary symptoms. Some part or parts become indurated and hypertrophied, the organ assumes an odd shape, and cancer may be suspected. Erections become very painful, and give the patient great uneasiness. This state of the organ often depends upon infiltration of plastic matter into its fibrous tissue, and iodide of potassium should be employed, as well as local applications, to cause absorption of the foreign matter.

I lately saw an elderly man who had suffered from repeated attacks of syphilis in almost all its forms; he subsequently complained of a swelling in the penis, and, after much pain and suffering, shreds of

lymph came away by the urethra, and a sanious thick discharge continued for a length of time, and in profuse abundance. The supposition was, that the patient suffered from chancre in the urethra; but my opinion, given at the time, was that this patient laboured under syphilitic degeneration of the fibrous tissues of the penis. I never saw the patient afterwards, and am unable to give the result of the case.

I was in correspondence lately with Mr. Horniblow, of Leamington, about a patient, who probably suffered from one of the forms of this affection; and I have reason to think them far more common than they are usually supposed.

Pearson has the following observations on disease of the corpora cavernosa:—

“Sometimes after the healing of a chancre, a certain number of the cells of the corpora cavernosa become eroded, by which the penis is bent or curved during erection. If the cells be destroyed, there is no cure; but the curvature often arises from slow inflammation, then the part is hard, dense, and almost incompressible; the blood has not a free admission, and probably the cells are frequently obliterated or filled with some fluids.

“Sometimes the upper part is affected, and then the penis becomes curved upwards; at other times, the corpus spongiosum is destroyed, and this case admits of no relief. These are not merely the effects of venereal virus, since they occur to married people who have had no venereal affection. The whole of one corpus spongiosum has been so affected as to prevent sexual intercourse. We have cured some such cases by occasional purgations and frictions with ung. hyd. and camphor on the part, for five or six months. In one instance, the patient said he had a discharge of bloody matter into the urethra, and was sensibly relieved by it. Soap plaster is useful in such cases.”—(“Pearson’s Manuscript Lectures,” p. 104.)

Civiale says, “In addition to the effects of catheters, above spoken of, there is one which I have discovered only recently, which I think deserves attention. Catheters kept permanently in the bladder often cause the disappearance of those swellings of the corpora cavernosa, and hardness of the penis with or without stricture, which complicate the various affections of the genito-urinary system, and render their treatment very difficult.” (“Civiale sur les Mal. Genito-Urinar., vol. i. p. 221.”)

Since, then, the gunnata of tertiary syphilis may develop themselves in the fibrous tissues, and undergo there all the changes described at p. 484, we need only refer our readers to that part of the work.

TERTIARY AFFECTIONS OF THE OSSEOUS SYSTEM.

A few years ago we might have said that tertiary affections of the bones were very common. These diseases are, however, now every day becoming more and more rare in consequence of the general administration of iodide of potassium, which acts not only as a preventive, but rapidly cures the affections when taken in time.

DIVISION OF THE SUBJECT.—These, like the other affections of which we have spoken, differ according to their position. It will be well for clearness' sake to describe them separately. We shall accordingly first speak of the affections of the enveloping membrane or periosteum, which are comprehended under the term PERIOSTITIS, and then of those which attack the substance of the bone itself, which are classed by pathologists under the term OSTITIS. It must, however, be recollected that, although these affections are described separately, they are often found together.

SYPHILITIC PERIOSTITIS.

My own belief is, that the affection we are about to describe is nothing but a gummous formation situated between the periosteum and the bone, but depending rather on the periosteum, which developes itself in the same way, and as we have seen the development of other gummata. (See p. 484.)

SYMPTOMS.—M. Ricord says, "The first phenomena which raise a suspicion that such lesions have taken place, are the characteristic tertiary pains in the bones, which are widely different from the rheumatic pains of the second syphilitic period. These pains are very tardy, and generally have their seat on those points which are subsequently to become involved in organic lesions; they mostly occur on the following bones:—Internal and anterior part of the tibia, cranium, clavicle, the ulna almost through its whole length, the lower part of the radius, either the superior or inferior part of the fibula, inferior maxilla, metacarpus, and metatarsus, malar bones (rarely), vertebræ, nasal fossæ (often). The humerus, femur, and pelvis, are most exempt, but it is not rare to see the ribs affected. Although such pains may be looked upon as constituting *per se* manifestations of tertiary syphilis, and their origin is sufficiently clear, still they are so intimately linked with other lesions, that the study of their ætiology in an especial manner will, I think, be useful. These symptoms were hardly described before the fifteenth century, either as denoting latent lesions, or as being of a syphilitic origin. This shows evidently that they passed unnoticed. Very likely they existed before the fifteenth century, and, if it be so, we can only account for their not being mentioned, by supposing that attention was not directed towards them. It has long been held that these pains were the effect of mercury; but to prove this assertion to be untrue, we need only recollect that they were described during the epidemic of the fifteenth century—a period when mercury was not used for diseases affecting the system at large. Some people have also attributed the pains in the bones to mercury and syphilis combined; but here again we must notice that a well-regulated external application of mercury is very likely to prevent those pains altogether.

"The part affected neither changes in size, nor colour, nor temperature. The pain arises without any exciting cause; it lies very deep, and is much excited and increased by pressure; whereas pressure has no effect on secondary rheumatic pains, except that it sometimes

eases them. The tertiary osseous pains are fixed and circumscribed, whereas the rheumatic are metastatic and more diffused; they have, however, this in common—that they increase by the decubitus and by the heat of the bed; in fact, they are nocturnal; and I need not repeat how I understand this expression. If these osteocopes are allowed to proceed undisturbed, they will certainly end in an organic lesion of the part, whilst the secondary rheumatic pains will, after a certain time, disappear, without leaving any trace whatever.* The tertiary pains are at first intermittent and nocturnal, but soon make their appearance during the day, at first only slightly, but afterwards increase in severity till they torment the patient day and night, and produce other accidents.

“It will now be useful to inquire how long they may last without bringing on organic lesions. I can deduce from my experience and the practice of others, that these pains may extend over as long a period as two years without any lesion of the osseous textures; this, however, may be looked upon as the exception, the rule is, that osteocopes which last, unchecked, for six months, will very probably produce troublesome alterations in the osseous tissues.”

NODES.—This affection of the periosteum, which surgeons call *nodes*, may be divided into three varieties: the *elastic*, the *phlegmonous*, and the *plastic*.

The Elastic Node.—The first of these presents a tumour with an immovable base; it is more or less circumscribed, of a spherical shape, and the integuments, which easily glide over it, are not changed in colour or temperature. Elastic tumours unconnected with bone adhere, on the contrary, as we have stated when speaking of them at p. 519, to the inner surface of the skin, are very moveable, and may be easily isolated by making pressure behind them, in all of which particulars they differ from the first variety of nodes. The latter, moreover, are preceded by osteocopes, but there is no pain before the appearance of the cutaneous tumour; none, in fact, is experienced until suppuration comes on. These doughy or elastic nodes (they give the hand the sensation of confined gum) are the result of the effusion of a thickish fluid under the periosteum; they are generally painless, fluctuating, and tend to resolution; this variety is the most easy of cure, and the least painful.

The Phlegmonous Node.—This form of node is preceded by inflammatory action. It gives exquisite pain, and generally suppurates; the purulent matter accumulating between the bone and periosteum. Both the premonitory pain, and that which follows the complete

* “From long-enduring rheumatic inflammation in any of the large joints, more especially in the hip, the cartilages are absorbed, and the bones become indurated, enlarged, and altered in form, probably from the pressure they have received in an early stage of the disease, when their texture was softened by inflammation; thus, the head of the femur becomes broad and flattened, and of irregular figure, with corresponding changes in the acetabulum. With induration of the articular ends of bones, their surfaces, when deprived of cartilage, become smooth and polished, with a porcellaneous appearance, owing to the Haversian canals becoming filled with earthy substance.” (Microscopic Observation by Mr. Quekett, of the Royal College of Surgeons.—“Stanley on the Bones,” page 23.)

“Whilst rheumatic inflammation occasions general enlargement of the shafts of bone, syphilitic inflammation in the periosteum gives rise to circumscribed swelling of the bones, or nodes.”—(Loc. cit., page 25.)

development of the affection, are extremely severe; the integuments become hot, red, and adherent; and an abscess speedily forms.

The following case is probably one of phlegmonous node:—

Mr. V., a foreigner, came to me in October, 1856, with considerable swelling of the eye. On the external corner of the left frontal bone was a fluctuating swelling, which I punctured, and let out a considerable quantity of healthy pus. There was no other symptom except some old stains on the skin and one or two blotches on the face. I had attended him less than a year before for severe forms of late secondary symptoms, for which he took cod-liver oil and iodide of iron, and apparently got quite well. Severe pain came on after I had opened the swelling, shooting down the face. I ordered him to continue the poultice, and take iodide of iron. In December, having meanwhile been in France, he left off the syrup of the iodide of iron. In a fortnight he came to me with a swelling as large as a five-shilling piece over the right eyebrow. There was a sense of tension, but no fluid could be detected in it. It was excessively painful and the eye swelled so as to be nearly closed. Just above the swelling was situated a secondary spot, which looked inflamed. The secondary spots were very peculiar in appearance. He was a clear-complexioned, dark man, and over his face were small spots of a papular-looking, bright appearance, looking as if the heads had been rubbed off. They looked on the surface like a boil in process of cicatrization. I ordered him the iodide of potassium.

He had twice had relapses of rupial sores on his body, which yielded to the syrup of the iodide of iron; and a few months before this attack he had suffered from enormous enlargement of the glands within the pelvic cavity, which suppurated, and opened externally in the iliac region (see p. 393); under the steady use of the iodide of potassium this case entirely recovered.

The Plastic Node.—This begins like the elastic form of node, but is a little more painful; the skin remains unaffected; the tumour is at first fluctuating, afterwards, however, it acquires a little consistence, gets gradually hard, passes through the different stages of plastic sarcocele, and at last results in ossification and eburnation. This is a species of exostosis resembling an epiphysis, which, if not seen early, may give rise to much difference of opinion on its nature, as occurred in the following instance:—

In 1856 a Jewish gentleman, 28 years of age, came to me with an evident swelling on the frontal bone; viewed laterally it was raised from the surface to about the thickness of a five-shilling piece, so that his hat could not be put on. The exact boundaries of the swelling could not be ascertained. It was softish, slightly painful on pressure, and he suffered from an almost constant pain in the head, with a desire to sleep—the appetite was impaired. There was no increase of pain at night, and he usually slept well. There was no other symptom of syphilis present.

He had had syphilis four years before, for which he was treated in Ireland, and took mercury largely. Nine months ago, secondary symptoms came on, and he placed himself under M. Ricord's care, who gave him pills for three months. A few weeks ago, being in Paris, he showed the swelling to M. Ricord, who did not consider it

syphilitic. On meeting Sir B. Brodie in consultation on the case, he expressed himself as having no doubt that the disease was the result of mercury acting on a peculiar constitution. He considered that the bone was affected, and that, if left alone, it would produce ulceration and death of the parts. He stated that he had seen similar effects both where syphilis was present and where it was not, when mercury had been given largely. He recommended sarsaparilla to be taken in as large quantities as possible, and did not advise the administration of any iodide of potassium.

The case improved very little under this treatment, and I ordered a blister on the swelling, and reapplied it with decided benefit, at the same time giving nitric acid and prescribing bitter tonics and a generous diet. The patient went out of town, and I lost sight of him for the time; but I met him twice afterwards at considerable intervals, and on both occasions he was quite well, and no trace of the swelling or pain remained.

THE DIAGNOSIS.—When these swellings occur on the front of the leg, and the history shows that syphilis has preceded them, very little doubt can exist as to their nature. It is only in the class of cases, of which the following is an example, that the surgeon is likely to be at fault.

In the year 1859 I was asked by Mr. Giles of Hackney to see a young married woman labouring under incipient secondary symptoms, and my attention was directed to what would have been generally called nodes. On the front of the tibia I noticed several rosy-coloured elevations, which were exquisitely sensitive to the touch, accompanied by blotches on the skin of an unmistakeable syphilitic character. There was so much pain at night as to prevent sleep. She also suffered under general debility. This case (I should say) had been under the care of a City surgeon; the patient had taken mercury, and Mr. Giles had been consulted only the day before.

I had no hesitation in diagnosing in this instance the supposed nodes to be nothing but *erythema nodosum*, complicating a case of secondary symptoms. Fomentations were applied to the legs, and the case did well. It is important to remember that such a complication may occasionally be met with.

THE TREATMENT.—As this subject will be fully discussed under the head of Diseases of Bone, I shall refer my readers to that section.

SYPHILITIC OTITIS.

We now come more properly to speak of the syphilitic affection of bones. Virchow of Berlin has lately made these diseases a special study, and he says, "We may divide the effects of syphilis in bone (however numerous be the different forms), into two great groups.

"The *first group* consists of simple inflammatory products; the *second* of specific products.

"Sclerosis (conversion into a sclerotic kind of membrane) and hyperostosis—exostosis, nodes, and caries, are results of the inflammatory condition of bone.

"Gummata of the periosteum, medullary and bony tissue, inflammatory atrophy and necrosis, are specific lesions."

The SYMPTOMS of osteitis are so similar to those described at page 505, under the head of syphilitic periostitis, as to require no further description here.

The CONSEQUENCES, according to M. Ricord, may be classed under the heads of *Exostosis*—that is, hypertrophy of the bony tissue; *Caries*, or suppuration of bone, and *Necrosis*, or exfoliation of bone. These I shall successively describe.

SYPHILITIC EXOSTOSIS.—"In general pathology," says M. Ricord, "two kinds of exostosis are admitted, one being an exostosis growing as a sort of epiphysis; the other, the parenchymatous exostosis."

Periosteal Variety.—In the first kind, a plastic effusion occurs between the periosteum and the bone, or within the cells of the periosteum. The latter gets a little thickened, and shows a tendency to lose its connexion with the bone, by the infiltration of the lymph in its intimate texture. This effused matter becomes thick, undergoes a fibrous transformation, and is converted into cartilage, which is the nidus wherein new bone is generated. It is within this cartilage that the calcareous matter which is to constitute the exostosis is deposited. The latter, thus adventitiously formed, may be generated within the substance of the periosteum, and be separated from the bone by a layer of the membrane; or else it may rest directly on the bone itself. The latter, if the disease be confined to the periosteum, may remain perfectly healthy, although covered by this new formation; but adhesions at length take place, and the bones become involved in the morbid process. It is probable that in such a case, the parenchymatous exostosis—viz., that generated by the bone itself—combines with the osteitis, which has been shown to grow in the manner of an epiphysis. The latter variety is generally circumscribed, symmetrical, rarely multiple, and the skin which covers it, as well as the bone below it, remains in a perfectly normal state. The surface is rarely uniform, irregular, raised, knotty, and stalactiform. When these bony growths have once reached the state of eburation, they give no more pain, and remain stationary.

The parenchymatous exostosis (or second species) is much more rare than the periosteal variety; it is seated in the thickness of the bone, and is the result of regular osteitis. The inflammation is, however, circumscribed, and has no tendency to what is called hyperostosis, as is noticed in scrofula; it is, on the contrary, simple and well defined. The compact portion of the bone is affected in this kind of exostosis, whereas the spongy texture suffers in struma. The osteocopes are here extremely severe, because the inflammation occupies a very compact fibrous texture, which circumstance gives rise to a sort of strangulating sensation. Swelling of the bone occurs, and a plentiful deposition of calcareous matter takes place within the tumour. Scarpa used to explain the mechanism of exostosis in such cases, by supposing that there was softening of the bone, reabsorption of the calcareous portion already present, and a deposit of new earthy matter after the absorption of the original calcareous constituent. There are no facts which prove the accuracy of this theory. The

most generally received opinion is, that a certain divarication takes place in the fibrous meshes of the part, that a plastic effusion occurs in the intervals of the fibres, and that a deposition of calcareous matter afterwards fills up these very intervals. This deposit of phosphate of lime becoming at length very large, and too bulky, gets finally atrophied, or else destroys the subjacent healthy structure, and remains stationary. This is the period of eburnation, or ivory exostosis.*

TERMINATIONS OF EXOSTOSIS.—Chronicity is the rule here, and an acute stage the exception. The disease does not pursue a regular and steady course, but its onset is marked by intermittence; so that the regularity of progress, which has been looked upon as a pathognomonic sign of the affection, cannot be depended on. This affection, if watched from the very beginning, will be perceived to have a constant tendency to ossification and eburnation; but this termination is not actually unavoidable; for resolution may occur either spontaneously, or by the assistance of art; and if the surgeon is consulted early, it is, in fact, not very difficult to bring it about. Exostosis of a venereal nature may likewise terminate in suppuration, wheresoever its seat may happen to be; but this process occasions much less pain when the disease has attacked the cancellated structure of the bone, than when it affects the compact portion. In such cases there is complete destruction of the organic portion of the bone, and nothing but the calcareous constituents are left.

"DIAGNOSIS.—Syphilis may be combined with scrofula, the latter being either congenital, or acquired in consequence of the syphilitic taint. In such cases the manifestations will bear a double character, and it is of some importance to distinguish accurately the respective symptoms peculiar to each of these affections. Scrofulous disease of the bones is almost painless at the beginning; unpleasant sensations come on but very gradually, and that it is only in the very latest periods that pain becomes acute; whilst the very reverse happens with syphilitic otitis, for at the closing period—namely, that of eburnation—the pain entirely disappears. Scrofula very commonly attacks the ends of bones, where the cancellated tissue is very abundant, whereas tertiary syphilis occupies the whole thickness of the compact texture. If the two diatheses are combined, the lesions do not affect the body of the long bones exclusively where there is much compact tissue, nor only their extremities or spongy textures, but are generally situated on intermediate points, which are then more or less near the middle or extremities of the bone, as syphilis or scrofula predominates. Thus, white swelling may be of a syphilitic nature.

* "The enlargement of bone with induration, is the effect of prolonged inflammation in its tissue; and, according to the observation of Mr. Paget, it appears that the lamellæ of the inflamed bone are first separated and its cells widened; and that the lamellæ become thickened, hardened, and consolidated together. As in the original formation of bone, its solidity is owing to the formation of osseous concentric laminae upon the insides of the Haversian canals; so, in disease, its induration is the effect of increased osseous formation within these canals, narrowing some of them, and obliterating others. Accordingly, indurated bone is less vascular and less oily than healthy bone, and in the microscope its vascular canals are found to be few and of small size"—(*Stanley on the Bones*, page 20)

Therefore the form, seat, or intensity of the manifestations are not sufficient to establish the diagnosis; the present state and the accurate history of the case must be taken into account.

To make more apparent still the distinctions between syphilis and scrofula, as they affect the bones, I append the following comparative table:—

Syphilitic Affections of Bone.

1. Very rare with young people.
2. Syphilitic history.
3. Compact texture of bones attacked.
4. Superficial part of the bone.
5. Little tendency to enlargement of bone.
6. The pains which precede the development of the affection increase and become very intense, decrease again, and entirely disappear in the later periods of the disease.
7. Remain circumscribed.
8. Exostosis.
9. Tendency to ossification and eburnation, but very little to suppuration.
10. A chain of syphilitic symptoms, either concomitant or antecedent.
11. Rapid cure under appropriate treatment.

Scrofulous Affections of Bone.

1. Very frequent in youth.
2. Scrofulous history.
3. Spongy or cancelled texture of bones attacked.
4. Deep parts of the bone.
5. Much tendency to enlargement of the bone.
6. The tumefaction precedes the pain, but the latter soon increases and becomes more and more intense as the disease advances.
7. A tendency to diffusion.
8. Enlargement of bone.
9. Tendency to softening, to suppuration, caries, and necrosis, but not to ossification.
10. A chain of scrofulous symptoms widely differing from those of syphilis, either concomitant or antecedent.
11. Very difficult to treat, cure often incomplete, and sometimes impossible.

The TREATMENT will be discussed hereafter.

SYPHILITIC CARIES.

Mr. Stanley, in his work on Bones, thus speaks of the affection:—

“Caries exhibits in its progress the following phenomena: inflammation extends from the bone to its investing soft parts. These become swollen, thickened, and tender, and abscesses are formed in them, which contract into fistulous passages, leading to the diseased bone. The periosteum covering the diseased bone becomes thickened, very vascular, and readily separable from it. The bone at first is very vascular, then its cells become filled with a reddish-brown fluid, apparently a mixture of blood and pus, and occasionally mixed with oily particles. Absorption of the bone, but chiefly of its animal fat, ensues; that which remains is porous and fragile, and of a grey, brown, or black colour, probably from decomposition of the matter

within its cells ; to which cause likewise the foetid odour of the Matter discharged through the fistulous passages may be ascribed.

“Syphilitic ulceration of bone usually begins at many points, distinct yet close together, giving to the surface of the bone a worm-eaten appearance.”—(Page 52, 59.)

We should remember that certain portions of the osseous system are more predisposed than others to caries of a syphilitic nature. First and foremost are all the bones of the face ; and among those of the head, it is the ethmoid which is the most frequently attacked.

Still, modern investigation, as stated at page 516, has demonstrated that these affections come on more frequently from gummata existing between the bone and periosteum, or from the effects of mercury leaving the bone bare, than from the bone itself becoming diseased in the first place.

SYPHILITIC NECROSIS.

Mr. Stanley thus describes syphilitic necrosis : “Syphilis produces its effects mostly upon the compact osseous texture, and in portions of bones which have thin soft coverings, as the flat cranial bones, the front surface of the tibia and the posterior border of the ulna near the olecranon. One of the modes of action of the syphilitic poison is to produce the immediate and complete death of the surface of bone it attacks. A circumscribed puffy swelling then arises, as in the investing soft parts, and in the centre of this swelling an ulcerated hole speedily forms, leading to the dead bone.”—(Page 76.)

Virchow has, however, more minutely examined this destruction of bone, and arranges the various alterations which syphilitic affections may produce under the following heads :—

1. *Caries and Necrosis following the eating ulcers affecting the surrounding parts.* In this category we must include a large proportion, if not the whole, of the alterations of the roof of the palate, the septum of the nasal fossæ, as well as the thyroid cartilage.

In these cases the periosteum and perichondrium are destroyed, the osseous surfaces and cartilages are laid bare and finally necrosed. All the superficial bones (such as the sternum and scapula), may under certain circumstances undergo this modification.

2. *Periphere Caries and Necrosis following on suppurating periostitis, or bloody deposits.* I have seen some such cases in syphilitic subjects where the tibia was affected, but I could not decide whether this form was produced by the syphilitic action alone, or whether it is at all common. I hardly think it is.

3. *Internal Caries and Necrosis a consequence of gummous or suppurating osteomyelitis.* I have never met with this form on the fresh parts, but M. Ricord's plates, particularly P. xxviii. bis, and xxxix. bis, are so conclusive that I admit it without hesitation. What he describes as plastic degeneration of the marrow into a yellow, hard, and lardaceous mass, agrees completely, as we have seen above (p. 484) with the structure and development of gummata in other organs. In these cases it is evident that the disease commences in the internal medullary cavity of the bone ; whereas on the external surface we

notice only a simple dilatation of the medullary canals, a thickening of the cortical layer of the bone, and hyperæmia of the part. If we attentively study the particular aspect of necrosis of the bones of the head during the course of constitutional syphilis, it is evident that the disease is of a specific nature. It is from within outwards that the necrosis here extends. A portion of the necrosed bone containing large pores and of a worm-eaten appearance, but with a plane surface, separates itself from the living bone by a toothed line of demarcation with well-defined angles. The edges of this, converted into a membrane like the sclerotic, become more and more elevated by the deposition of new layers of bone, and extend beyond the mortified portions. Other lesions occur—some at considerable distances apart, others side by side—and then unite, producing such extensive destruction as in some cases to implicate the whole of the cranial vault.

Signs of irritation of the periosteum are entirely absent at the commencement of the alterations, or at least, are not well marked. These affections bear a close resemblance to those deep tubercles which form in the soft parts, and are the most malignant of the osseous alterations of tertiary syphilis.

4. *Dry Caries or inflammatory atrophy of the cortical substance of the bone.* This is a form on which little has been written, but which seems to be among the most common. It may be called dry caries, or inflammatory atrophy of the cortical substance of bone. This affection is constantly seated on the external surface of the bone, and I have not seen a single case which has been attended with suppuration, although considerable disorder of the system and the adjacent parts is often the result. Thus it often exists simultaneously with the gummous tumour of the periosteum. M. Ricord gives a drawing of this sort of caries in his Plate xxx. Fig. 4; here we see the bone at the spot which was the seat of the caries, presenting a rugous portion denuded of its periosteum without any appearance of suppuration. (See page 519.)

The Goodsirs of Edinburgh thus describe the exfoliation or separation of the sequestrum, when studied by means of the microscope: "When a portion of dead or dying bone is about to be separated from the living, the process which occurs," says Mr. Goodsir, "is essentially the same as that which has been described (in the account of the separation of a slough in soft parts); the Haversian canals, which immediately bound the dead or dying bone, are enlarged contemporaneously with the filling of these cavities with a cellular growth. As this proceeds, contiguous canals are thrown into one another; at last the dead or dying bone is connected to the living by the cellular mass alone. It is now loose, and has become so in consequence of the cellular layer which surrounds it presenting a free surface, and throwing off pus."—"Anatomical and Pathological Observations," 1845.)

Mr. Stanley says:—

"Necrosis followed by reproduction in any of the flat bones is rare; in some of them it never occurs; for example, in the flat bones of the cranium, as would be expected from the consideration of the difference in the relations of the pericranium and dura mater to the

cranial bones, from those of periosteum to other bones ; the pericranium having no tendency to form new bone, and the dura mater having this tendency in a very limited degree ; here, moreover, there is no stratum of soft vascular tissue to serve as the matrix of reproduction."—(*Loc. cit.*, page 114.)

"It is doubtful whether any of the short cylindrical or irregularly-shaped bones are ever reproduced."—(*Loc. cit.*, page 115.)

I should here make a few observations on *local affections* of bones, as it will enable me to apply the preceding remarks to the treatment of special cases.

SYPHILITIC AFFECTION OF THE BONES OF THE NOSE.

NASAL OTITIS.—Fortunately this is, in the present day, a very rare sequela of syphilis. The disease, when it occurs, comes on in a very insidious way. The following is a note of a case that came under my care. A short, stout gentleman, about thirty-five years of age, called on me and gave the following history of his ailment. Five years ago he contracted an indurated chancre, and took the iodide of mercury pills under M. Ricord's advice. He was afterwards told not to leave off the pills for three months ; finding, however, that the iodide of mercury had removed the induration, and being absent from Paris, he laid aside all treatment, and concluded that he was quite well. In about eighteen months after, a few spots appeared on his head, but these were his only ailments during the four years following the chancre. At the end of that time he at first noticed a more abundant secretion than usual flowing from his nose, which he attributed to cold. After some time he consulted me, and I detected a very disagreeable smell, and on passing a probe up the nostril there was evidence that the bones were extensively diseased, particularly the plates of the ethmoid bone and vomer. I removed all the portions of bone that I was able to reach, and gave cod-liver oil and iodide of potassium, alternately with the syrup of iodide of iron. The patient progressed but slowly, portions of bone from time to time coming away within the next twelvemonth. Various methods of removing the disagreeable smell were tried, but the only effectual one was the removal of the diseased bone. I found the solution of permanganate of potash in the following formula very beneficial.

R. Liq. Potass. Permanganatis ʒij (gr. ij ad ʒj)
 Aquæ destillatæ ʒviij.
 M. ft. Lot.

During the treatment this patient went to Paris and saw M. Ricord twice ; large doses of iodide of potassium were given, and continued for some time. I was obliged once or twice to discontinue the enormous doses of iodine in consequence of head symptoms coming on, but by M. Ricord's advice they were resumed. The local application was tincture of iodine in the following formula, which I occasionally left off, substituting solutions of alum or zinc when there was an increase of watery or purulent secretion.

R. Tinct. Iodinæ ʒj.
 Potass. Iodidi ʒj.
 Aquæ destillatæ ʒviii.
 M. ft. Lot.

On recovery, the patient complained of feeling a kind of cavity in the nose when he drew in his breath, and after speaking, the mucus would harden and irritate the nasal membrane. In this case there was no falling in of the bridge of the nose, and recovery was perfect, although it required a long persistence in the remedies. My patient retained his good looks and gained flesh, and did not complain of any loss of virile power. He was a married man with children, who were not affected in the least.

It would appear that when once these delicate bones are attacked, they must perish, melt down, or be cast off; we cannot expect to save them, and every step should be taken to remove them, as, when dead, they become foreign bodies and keep up the irritation.

When the vomer is necrosed, the nose falls in, the nares are turned directly forwards, instead of looking downwards, and the tip of the nose mounts upwards. In the ulcerative stage of secondary syphilis, when the affection attacks the nose, as it sometimes does, a quite different part of the nose suffers—namely, the alæ, and they are frequently entirely destroyed after cicatrization; the tip of the nose then turns downwards, and the organ becomes crooked. When the tertiary symptoms settle upon the vomer, the patient is seized with frequent nocturnal headaches and sharp pains at the root of the nose; these pains are generally much increased by pressure; but when the mischief is going on far back within the nose, pressure has no effect. Patients are then troubled with coryza, which resists all ordinary means; the secretion of the part becomes muco-purulent, and even altogether purulent.* The pus is thrown off from ulcerated surfaces, and often contains an osseous detritus; it exhales a very offensive smell, owing to the peculiar nature of the ulcerations, and likewise because it often remains stagnant for a long time.

Were I guided only by what I have seen in private practice, I should say that syphilitic disease of the bones of the nose is confined to the plates of the ethmoid bone and vomer, and that in the present day the nasal bones remain unaffected. This probably arises from our patients seeking surgical aid before disease has had time to spread far. In former days, and perhaps even still among the lower classes, the nasal bones may become affected. M. Ricord says, "When the two nasal bones become attacked, we perceive the skin covering them turning red, and the tumefaction which ensues causes an ugly deformation of the part, which latter is extremely painful and very sensitive to the touch. The pain may, as is generally the case in secondary symptoms, be severest at night. The inflamed points yield a crepitating fluctuation, which indicates the presence of air in the cellular tissue; and this air may be looked upon as a sign of

* In cases of diagnosis of disease of the bones, the pus should be examined, as Mr. B. Cooper has shown that the secretion arising from diseased bones contains a large quantity of the solid constituents of bone in solution, which consequently pass off in these fluids.—("B. Cooper's Lectures," *Medical Gazette*, May, 1845.)

the perforation of the nasal bones. The frontal sinuses may be affected in the same manner, and occasion symptoms of a similar nature.

The loss of the sense of smell does not necessarily attend this affection, but it occurs in some cases. In one case the loss was attributed (by the patient) to the lotion of zinc which he employed. Fortunately his power of distinguishing scents came back again.

SYPHILITIC AFFECTIONS OF THE LACHRYMAL APPARATUS.

When the lachrymal apparatus becomes affected in consequence of facial ostitis, the existence of which is concomitant with other tertiary accidents, there can be no doubt about the nature of the affection; but it sometimes happens that the ostitis occupies only that portion of the superior maxilla which gives support to the nasal duct, and then the pain may be very slight, and pass entirely unnoticed. The first symptom which attracts attention is an obstruction of the lachrymal sac, and a tumour about the inner canthus of the eye; and if the disease be not promptly arrested, it may end in caries of the bones. It is of vital importance to ascertain the nature of the disease accurately; for in tertiary syphilitic affections of the sac there is no need of operation, and setons or canulas would increase the mischief, and hasten caries and necrosis. Intra-orbital exostosis, or more frequently periostitis, is also pretty often met with. The development of this affection is marked at the outset, by symptoms which are more or less apparent, and they mostly end in exophthalmia. Some patients suffer from ambliopia, partial amaurosis, or complete blindness, before the eye protrudes. The periostosis is commonly situated on the roof, the orbit projects from under the orbital arch, and has a tendency to depress the eye; if suppuration takes place, the destruction of the greater part of the upper lid is sure to follow, and the cicatrix which is left is sunk and sometimes very deep.

SYPHILITIC AFFECTION OF THE HARD PALATE.

Palatine Ostitis.—This inflammation is very frequent, and passes through the stages which I have just described with reference to the nasal bones; it generally settles in the median line, and has its seat at the junction of the two halves of the palatine process of the superior maxilla. This medio-palatine ostitis, which is by no means rare, mostly terminates in suppuration; the mucous membrane is raised by a collection of pus beneath it; and the prominence, which is the result of the suppuration, has a fluctuating and crepitating feel; and when perforation of those bones takes place, it mostly proceeds from the nose into the mouth. This syphilitic ostitis often attacks the incisive alveoli where no scrofulous complication exists; the sockets swell, the gums become vividly red, and puffed up; the two central incisors get loosened and apparently lengthen; all the four incisors are soon involved in the mischief; and if no means be taken to stay the progress of the disease, the alveoli will lose their connexion with the rest of the bone; they get as loose as the teeth themselves, and act at last as foreign bodies. The ordinary therapeutical means are powerless to arrest this destruction; the best practice is, to remove

the detached portion of bone, so as to prevent the irritation which its presence is causing. Great discrimination is required in removing the teeth. I usually now attempt to preserve them, as I have seen them gradually become fixed again in their sockets after being very loose.

There is an affection of the *teeth and gums* which patients often consider to be syphilitic. It begins by a sponginess of one or more of the gums, abscesses occasionally form, and the gums recede from the tooth, leaving it exposed. In other instances the tooth becomes loose and may be removed with the finger, or remain loose some time before it falls. Others become affected until all are lost. Syphilis may produce these symptoms, but it should be remembered that they may and often do arise in patients who have never suffered from specific disease.

SYPHILITIC AFFECTIONS OF THE BONES OF THE SKULL.

To judge by the numerous specimens of worm-eaten-looking skulls seen in museums, syphilis would seem to have formerly attacked the bones of the head far more commonly than at present. In private practice these affections are now comparatively unknown. During the last ten years I have not witnessed a single instance, and I therefore must depend upon the descriptions given by others.

Virchow has given two wood-cuts showing the way in which disease may attack the parietal bones. He says "the pericranium always offers modifications less important than the endocranium (that is, the periosteal layer of the dura mater). With respect to the bone, we observe, as in the gumous osteomyelitis, that the disease sometimes attacks several points, sometimes only one, by producing alterations forming a sort of abscess (*foyer*) on the internal or external surfaces of bone, but rarely upon corresponding parts or opposite surfaces, though I have sometimes met with this form. Lastly, two or more of these may become developed at a little distance one from the other, and become amalgamated.

Two modes of development different in appearance may be noticed in each of these *foyers*. In the centre a sort of thinning or atrophy (*travail regressif*) commences. At the circumference condensation or hypertrophy of the bony tissue (*travail progressif*) is set up. The thinning arises from the gradual enlargement of the medullary canals (*canaux vasculaires*) of the bone.



Fig. 1.

Portion of a parietal bone affected with ostitis and gumous periostitis.
The change is in its early stage.

We notice the open orifices, the pores which are the extremities of the straight canals of the cortical substance, and at the same time furrows,

converging towards the affected spot, which are formed by the parallel canals on the surface of the bone. At first the cortical substance of the bone (Fig. 1,) is hollowed out to a small extent. This depression assumes a starred appearance, and strikingly resembles certain cicatrices seen on mucous membranes—particularly those which are the consequence of syphilitic ulceration; as, for instance, on the nasal, pharyngeal, and vaginal mucous membranes.

This sort of stellated depression increases in area and in depth. The medullary canals around become enlarged. The centre is depressed and takes the form of a funnel, whilst the edges are perpendicularly cut, uneven, and wrinkled.

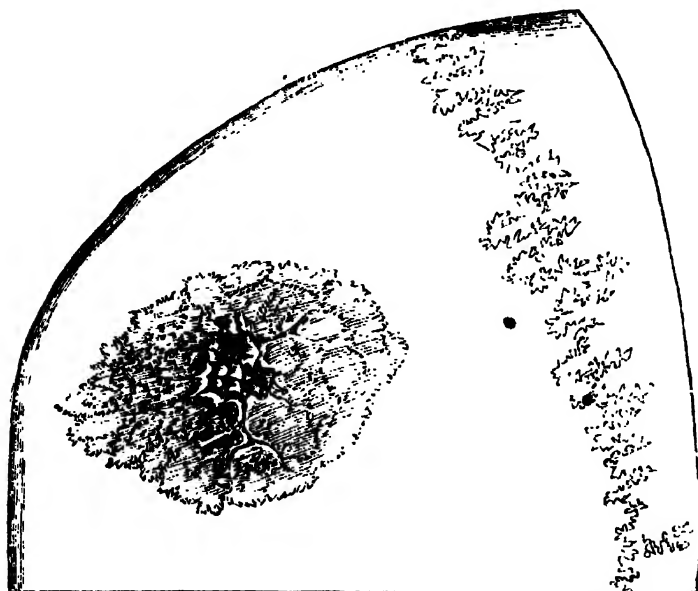


Fig. 2.

Portion of frontal bone after the evolution of a gummatous periostitis and osteitis.

The cortical part of the internal or external table by degrees becomes perforated, until the bottom of the funnel-shaped depression reaches the spongy portion of the diploe. I have even noticed in one case a perforation of the bone from one surface to the other, although of small extent. It arose from the meeting of two of these funnel-shaped depressions, corresponding like two cones, which join at their apices. While this thinning of the bone is going on, which becomes more extensive in proportion as the funnel-shaped depression is developed, osseous substance of a new formation becomes deposited at the periphery (Fig. 2). We notice it on the surface of the bone. At first it is but a pellicle of bone, soft, and very vascular, which rapidly ossifies, forming a bed of whitened osteophytes, and ultimately forms one with the primitive bone. At first the osteophyte is, as we have said, very vascular; its vessels are large and gorged with blood. Soon, however, it becomes more resistant, thicker, and white, and ultimately it becomes sclerotised, and then eburnated. As its structure assimilates to that of the surrounding parts, it almost always

forms a simple hyperostosis, or a simple periostosis, but not an exostosis. This last, however, is met with, at the same time, on other parts of the cranium. In some cases, but only in those which are very advanced, we find the hyperostosis forming (around the depression) an irregular border or hem. In these cases, it almost seems as if the hyperostosis must have commenced by a gumma; this, however, is not the case.

Osseous matter of a new formation is also deposited at the bottom of the affected spot. From the middle of the diploe, produced by the transformation of the medullary tissue, arise new osseous particles, which fill up the old medullary cavities of the diploe, and form, after a time, a sclerotic-looking membrane, which covers the whole of the affected parts. This membrane may spread for some distance, even when the funnel-shaped depression is not deep, and does not extend beyond the cortical layer of the bone. The thickened parts of the diploe may be traversed by this sclerotic-looking membrane, which is continued into a bed of osteophytes and hyperostoses on the opposite side of the bone, where they may be seen as distinctly as at the periphery of the funnel-shaped depression. Most frequently I have observed this last modification on the internal bony wall which looks toward the dura mater, even in affections whose origin was on the external surface of the cranium. The converse is rare—viz., the affection commencing on the internal surface of the bones of the cranium, and then manifesting itself on the external face. I have observed voluminous masses of hyperostoses occupying the neighbouring surfaces in cases when absorption began on the internal face.

To what are we to attribute this particular modification? There is no doubt that hyperostosis, as well as sclerosis of the surrounding osseous parts, is due to an irritation of the tissues, as is the case in many other forms of otitis and periostitis. It is, however, difficult to explain the atrophy and the formation of the starred and funnel-shaped depression. In no instance have I (during the evolution of this pathological act) observed the least trace of pus. Indeed, this morbid process might be called, and explained as, a *dry caries*, if it were not necessary to use the term caries to signify suppuration of bone.

The periosteum on the external surface of the bone is generally but little altered, and it is only towards the centre of the depression that we ordinarily find a conjunctive-tissue, of a very vascular character, and of a reddish white colour. We may almost compare this alteration to that of the other forms of peripheric atrophy of bones.

These, however, are not the only changes which osseous structures of the cranium may undergo. Virchow says, I have met several times, in cases of constitutional syphilis, certain particular *neoplasies* of bone which I have never found described anywhere."

They were found on the internal surface of the bones of the cranium, on the frontal and parietal specially. Flat external plates of exostosis were noticed at the same time, without any other affection of the bone or periosteum. On looking at the internal part of the dura mater still adherent to the bone, plates of a strange aspect, closely resembling moss, were observed. These were from a quarter to half an inch in extent, sometimes isolated, sometimes confluent,

more or less round in shape, their borders clearly limited, dentated and thick, of a dead white colour, presenting a rugous finely granulated surface. These plates were found even in the substance of the dura mater, and in separating them we noticed in the situation they occupied vacant spaces and depressions, closed by a very thin pellicle. These plates, in the generality of cases, had but slight adherence to the bone, but in some they were more closely connected with it."

I have dwelt at some length on the pathological anatomy of these bony* formations of the skull, because I believe that minuter acquaintance with them will in future throw considerable light on various functional affections of the brain, of which we hitherto have known little or nothing, and have not been prepared to connect with syphilis.

GUMMATA IN THE BRAIN.

Modern investigations have, however, proved that these tertiary deposits or gummata may be situated in the substance of the brain itself. These cases, it is well ascertained, both from the symptoms during life, and by *post-mortem* examinations, resemble, in every respect, those described at page 485, as occurring in the testicle. We may, therefore, by appropriate treatment, hope to cure a number of serious cases which we have hitherto been so little able to understand as to be obliged to put them down under the vague term "Brain Affections," ignorant of their close dependence on the syphilitic diathesis. It is now almost beyond doubt that many of these cases depend upon the presence of gummata or syphilitic deposits in the brain, or the course of nerves, which, by pressure, may induce all the symptoms of epilepsy, loss of power of movement, as well as deterioration of the intellectual faculties. Syphilis may, undoubtedly, so influence the brain; and from the same reasons, I should infer that the spine may be similarly affected. The really wonderful effects of iodide of potassium, blisters, and mercurial treatment in the speedy removal of symptoms similar to what might be expected to arise from this cause, corroborate the hypothesis that their origin is syphilitic.

Surgeons* have been induced to believe that, because exostosis was not found on the bones of the head, pressure on the brain was not likely to occur. The investigations, however, of Virchow prove that these gummata may exist, and, consequently, we may suppose that they

* It is remarkable, that whilst the pericranium in its structure and relations to the cranium differs in no respect from periosteum in its relations to other bones, yet that from the pericranium osseous deposits probably never arise.† Accordingly, the cranial bones are not found enlarged by osseous deposits on their outer surfaces; their enlargement is mostly the effect of expansion with induration of their texture, but is, in some instances, the effect of osseous deposits on their internal surface.— ("Stanley on the Bones," page 25.)

† The osseous deposits which in rare instances have been found on the exterior of the skulls of females who died when pregnant, or during the puerperal state, are but an apparent exception to this statement; for here the exudation is from the skull, not from the pericranium.

may cause, by pressure on the brain or nerves rising from its base, all those consequences which such pressure is known to produce.

The pressure or irritation may be situated either at the origin of the nerves, or on some point of the cerebro-spinal system. The symptoms are of course extremely various. I have pretty frequently met with cases of syphilitic disease of the bones composing the orbit, and mydriasis, or dilatation of the pupil, was generally the consequence. When the disease is situated at the base of the cranium, there is often paralysis of the fifth pair; but the motor oculi may also experience compression; and when this happens, all the recti muscles, except the external, are paralysed. The patients see very well when their eyes are directed straightforward; but when they attempt to give a lateral glance, one of the eyes remains unmoved, whilst the other obeys the will; the parallelism of the eyeballs is lost, and diplopia is the result. If the patients attempt to look upward, the inferior oblique muscle on each side fails to act, and there is again a want of parallelism, and consequent diplopia. I even recollect having seen cases of polyopia resulting from tertiary lesions.

The facial nerve is sometimes paralysed in a similar manner under the influence of tertiary symptoms; but this paralysis is always accompanied by deafness, while the affection of the same nerve, resulting from *secondary* symptoms, has no such complication. With secondary symptoms, the lesion of the facial nerve produces only a singing in the ears, which depends either on inflammation of the mucous membrane lining the Eustachian tube, or on slight congestion, or extensive irritation in the throat. The eighth pair may likewise suffer compression from the same causes; obstinate vomiting then sets in, and is with difficulty controlled.

Those who are called in to treat such affections should never forget in their diagnosis or their treatment that syphilis in its tertiary forms may play a very important part in causing affections of the brain. I do not pretend to assert that all these complaints are attributable to syphilis, but I feel confident that many are, and that they can be only treated by having recourse to the remedies which are efficacious in tertiary affections generally. If ebriation has taken place, our efforts are hopeless, and indeed the earlier the stage of the complaint in which our remedies are employed, the more efficacious will they be. And in the same way it is of the last importance, if we have reason to suspect the presence of gummata pressing on the brain or nerves, to begin the appropriate remedies without delay. We may indeed generally hope for a favourable result; for though epilepsy and its kindred complaints are almost incurable when caused by common causes, yet this otherwise formidable disease if it arise from syphilis is comparatively easily subdued.

I must not omit to mention paraplegia as an occasional effect of tertiary syphilis in the bones; the nervous disturbance is then the result of an osseous lesion, which latter begins by circumscribed nocturnal pains, and develops itself very slowly. Paraplegia may also be produced by a cutaneous elastic tumour; but I need hardly say that the latter is never preceded by the gnawing pains which generally usher in otitis. It is very important to establish a correct

differential diagnosis between these osseous lesions and the results of an elastic tumour of the skin ; for suppuration and the train of symptoms following compression are almost inevitable in the latter case, whilst in osteitis these results may be avoided.

Future observers may be unable to verify these statements on the existence of gummata in the brain or in the spine or bones of the skull from personal experience. But it is true that they *have* existed, and are occasionally found even in the present day. That they will become more and more rare, I can fully believe from my own experience, and society is indebted for this immunity to the almost universal employment (in Europe at least) of iodide of potassium. The worst cases of tertiary symptoms we now see come to us from our colonies or dependencies ; and in these it is far oftener from the insufficiency of the dose that has been administered than from complete omission of the remedy that the symptoms have arisen.

TREATMENT.—*Local Treatment of Affections of the Osseous System.*—*Pains in the Bones* should be treated, at first, by repeated applications of a few leeches, followed by poultices ; or the parts may be covered with lint dipped in a warm decoction of poppies, or laudanum and water. This treatment, together with a general one compatible with the state of the patient's constitution, will usually suffice, when the pain does not depend upon inflammation of the cancellated structure. However, there are forms of this affection which resist this treatment, and, although we are unable to detect either periostitis or osteitis, yet only cease on employing the remedies hereafter mentioned.

The Treatment of Periostitis should consist, at first, in attempting to allay all irritation by leeches and poultices ; when the first and third varieties (see page 506) exist, such a practice will often suffice ; in other cases, we must have recourse to a treatment which acts like a charm on the disease. Let a blister be applied on the painful portion of the bone ; when it has risen, the serum may be allowed to escape, but the epidermis need not be removed, as the pain will be less ; lint spread with the ceratum opii (3j to ʒiv) may be laid over it, and the whole covered with warm poultices, which should be constantly renewed. The severity of the disease, or its return, may require a repetition of the blisters, which should be treated in the same way. When the tissues have not undergone much organic change, the relief felt is immediate and lasting ; patients frequently fall into a calm sleep even during the drawing of the blister, after they have been kept awake by violent pain for weeks. If there be swelling, it may be often removed by the employment of blue ointment ; or by applications of tincture of iodine and water, as by the formula given above, page 515 ; or the suppuration may be kept up by means of the solution of corrosive sublimate. The pain attending this latter process will, however, generally preclude its employment. In the second variety of periostitis, this treatment is less efficacious ; it may be necessary in such cases to make incisions and let out the pus, as by such means we may prevent a further separation of the periosteum from the bone, an object always to be desired.

In speaking of the treatment of secondary symptoms we took occa-

sion to remark on the tendency syphilis in that stage has to relapse. The same is true of it when it has reached tertiary symptoms. The surgeon's treatment may almost immediately stop the outward manifestation of disease, but after a few months he must not be surprised at seeing the symptoms return. Thus nodes and periosteal inflammation will occur again and again, but will be increasingly amenable to the same treatment; and as the patient, warned by experience, generally applies early, speedy relief is obtained.

Local Treatment of Ostitis.—The treatment recommended in the two former affections—viz., pain in the bones and periostitis—is equally applicable and judicious in the early stages of ostitis, accompanied as it often is, with a deposition of callus forming the *epigenic exostosis*; but it may be necessary to employ the treatment more actively, and for a longer time, particularly in the *parenchymatous exostosis*. When called upon to treat a patient for diseased bone which has been converted into a species of ivory, all treatment will be unavailing, and it will become a question whether or no we might be justified in removing, by a surgical operation, this form of exostosis.

In cases of *caries* or *necrosis*, particularly of the bones of the face, no time should be lost; the diseased portions must be removed as soon as that is possible. M. Ricord observes, that the surgeon should be fully aware that caries produces caries; that a bone, the organic matter of which has been destroyed by suppuration, or which is dead, can never be regenerated by any treatment, general or local; and that it should never be left to be eliminated by Nature's efforts, except in those cases where the surgeon is unable to reach it. Bone of this description is truly a foreign body, keeping up and maintaining the disease, which, by means of the suppuration it gives rise to, may gain still deeper parts, and thus occasion *death*.

For the removal of dead bone, or to ascertain if the exfoliated bones are still firmly fixed, Dupuytren's suggestion may be followed—that with the end of one probe resting against the dead bone, a second probe should be introduced into another of the fistulous passages, and its end pressed against the dead bone; if this be moveable, it will be made evident by the impressions communicated through the probe which was first introduced.

GENERAL TREATMENT.—Our sheet anchor in the treatment of these affections of the osseous system is the iodide of potassium. It will, however, be unnecessary here for me to describe the method of giving it, the inconveniences it sometimes occasions, &c.; as these matters have been already so fully discussed at page 478. In tertiary symptoms patients bear it much better, and require larger doses than in the secondary stage of disease.

In cases where the bones are affected, we must above all things not lose time, or let the disease progress a single hour longer than is absolutely necessary. Important organs are in peril, and if once destroyed, they can never be replaced. We should begin by what to English surgeons may seem large doses. At least 15 grains three times a day may be commenced with, and as the constitution is found to bear the remedy well, let the dose be increased every few days, until double that quantity is taken. Let it, however, be recollected,

that the good effects of the remedy are to be looked for in cessation of pain, refreshing sleep, improved health, and good appetite. It will not cause the bone, if necrosed, to come away, nor will the discharge cease. These last symptoms must be relieved by the surgical means above spoken of.

M. Ricord observes, "The influence produced on the osteocopes may very well serve as a criterion of the action of the remedy, provided these osseous pains do not arise from suppuration, but are strictly a result of the diathesis. I have had patients in whom the removal of these pains required as much as one drachm and a half, two drachms, and even three drachms per diem. When a certain dose has once been fixed upon, it ought to be persevered in as long as the therapeutic effect is evident, and the pathogenic action not alarming. But the medical attendant must in this matter, as in many others, use his judgment, and regulate the modifications which the treatment is to undergo according to the peculiar circumstances of the case.

"We know pretty well what ought to be the daily dose of the iodide, but we are not so well informed as regards the absolute quantity which can be given with safety; it is impossible to fix this beforehand. Neither do we know exactly how long a time this medicine must be continued in order to free patients from the possibility of a relapse. I will merely repeat here what I said about the mercurial treatment—namely, that the iodine must be continued for as long a time as will fairly warrant us in supposing that it has done its duty; but you must recollect that neither this salt nor mercury is a certain and unfailing protection against relapses. Yet I must say that patients who have persevered with the iodide for three or six months have remained a long time without fresh attacks, and may perhaps never experience any."—(*Lancet*, vol. i., 1848, p. 656.)

SYPHILITIC CACHEXIA.

- It may appear almost superfluous separately to consider this affection, which is, after all, only an advanced state of tertiary syphilis. The fact is, however, that we occasionally meet with cases where all the *external* manifestations of tertiary syphilis have ceased, though many of its effects still remain, and the constitution of the patient is impaired. The syphilitic diathesis, indeed, is so marked in these cases, and the morbid condition of the constitution so great, that they require some notice here.

Some persons have supposed that this morbid condition of the system is only to be accounted for by supposing repeated fresh infections from syphilis. This is a serious error. It often happens that the greatest sufferers have never had syphilis but once, but the disease has happened to light upon a constitution peculiarly predisposed to take on the more violent forms of the complaint.

CAUSES.—The causes of this peculiar cachexia will be found to be either a bad constitution, obstinate complications, wrong treatment, or an idiosyncrasy or temperament which no treatment seems to correct.

SYMPTOMS.—In speaking of these M. Ricord says, "Any description

of syphilitic cachexia must fail to convey a clear notion of it, because its characters are not sufficiently well defined. It might indeed be called an exaggeration and an accumulation of all the forms which we have hitherto studied, combined with loss of flesh, paleness, flabbiness of all textures, sallow hue of the skin, weakness of the intellectual faculties, scorbutic manifestations, and, finally, hectic or continued fever, with exacerbations towards the evening. This fever very often persists when the external cachectic symptoms have entirely disappeared; and it is useful to know that it is sometimes symptomatic of an internal suppuration which escapes our notice. To all these symptoms aphonia is soon added; diarrhoea, profuse sweats, and defective nutrition come on, and death at last releases the wretched being from his sufferings. But, I repeat it, this species of cachexia is now very rare, and, I may add, that it will become still more so, thanks to the progress made in the therapeutics of venereal diseases."

The following is, I think, the most marked instance of this rare complaint that I have ever witnessed. An artist contracted indurated chancres, for which I treated him with mercury. Secondary symptoms did not follow, but a few years later disease of the superior maxillary bone came on. Effusion of pus into the antrum followed, and an aperture formed in the palate. I treated him with iodide of potassium, but he had several relapses. He was afterwards under M. Ricord's care for some time in Paris. Originally of a weak bilious habit, he became very thin, a mere walking skeleton, but without cough or night perspiration. General debility and apathy were the most prominent characteristics of his condition. No other bones than the superior maxillary became diseased, but he never recovered his health, and his constitution seemed totally unable to rally. One day I was sent for to see him. I found him propped up in bed; his breathing was short and difficult, his rest disturbed, and he seemed in the last stage of atrophy. His friends had given him up. One of our ablest physicians had examined his chest minutely, but could not detect any disease sufficient to account for his symptoms. There was no cavity nor tubercles, although some dullness in particular regions was present on percussion. He had been eating scarcely anything for some time, and as he took little exercise, seemed in an almost torpid state. We considered that it was not syphilis that was killing him, nor tubercles, but probably an anemic condition of blood; and iron, with generous diet, so as to rouse the system, if possible, was prescribed. He rallied for a few days, but shortly afterwards sank. On examination, the immediate cause of death was found to be acute phthisis—probably brought on by his cachectic state. There were no syphilitic tubercles found either in the lungs, heart, or other organs of the body.

I had an opportunity, some years since, of being present at the *post-mortem* examination of a girl, aged seventeen, who died of syphilitic cachexia. The following is the report of the case:—

Post-mortem examination of a Girl, aged seventeen, who died of Syphilis in the Middlesex Hospital, Dec. 4, 1845.—Mr. Hetley was kind enough to invite me to attend the *post-mortem* examination. I

collected the following history :—This girl was treated in January last for chancres at the hospital ; it was stated that she had been seduced, deserted, and infected on the same day. Rupia broke out over the body, particularly on the head, face, and right leg ; the eruption was described as being the most prominent ever seen. Everything had been tried to cure her, but she sank, as supposed, from a cavity in the lung.

Appearance.—Thin to an extent rarely seen. The hair had been cut close, and scars, said to have followed rupia, were evident on the face and head, and on the right leg ; but the rupial crusts had fallen off. A considerable quantity of fluid was found in the abdomen and chest, with some old adhesions ; the lungs generally healthy, emphysematous in some parts on the surface, in others there was some consolidation, and a few points, like tubercles, slightly softened ; the liver large, firm, and of a nutmeg character ; heart small, cavities very small, parietes very thick ; uterus that of a virgin, healthy in structure. The intestines were not examined.

My principal object in examining this case was to consider how a patient dies from syphilis. We are told consumption kills them. Surely this was not the case here, for there was no disease of the mesenteric glands or lungs sufficient to account for death. The syphilitic tubercles spoken of by M. Ricord were not evident, although I particularly looked for them.

Syphilitic cachexia, I may mention, as an evidence of its rarity, proved fatal in London only twelve times in three years.

When it does occur, the prognosis is very serious, still the surgeon should never despair. I some years ago attended a gentleman suffering from the most unpromising symptoms I ever witnessed. He contracted chancres, which he neglected and concealed from his brother, a physician, and took blue pill by the advice of a druggist ; in a very short time rupia appeared, and he was confined to his bed with ulcerations (as large as the palm of the hand) on several parts of his body. When I saw this patient he was reduced to the last stage of weakness ; everything had been tried that his brother could suggest, but the sores progressed in spite of treatment. He was placed on a water bed, the strongest possible nourishment given, tonics seemed to be little avail, and he only recovered slowly by minute doses of corrosive sublimate taken during a long period. He now walks about a consumptive-looking individual, it is true, but affording undoubted evidence of the power of corrosive sublimate in rescuing from the grave one of the most unpromising subjects I ever met with. I cannot recommend, however, this remedy as being of general application ; for I have since seen another gentleman in whom it did not appear to exert the same beneficial influence ; but in this last instance my patient suffered from severe emphysema, and appeared principally relieved by time and travelling.

The modern investigations of Virchow have, however, given additional interest (if that were possible) to these cases. With our present knowledge of the microscopic characters we have to expect, lesions in important organs may now probably be discovered, which

escaped notice a few years since. Still that author himself details several instances of this complaint producing death, which he was unable to prevent. Future investigations may, perhaps, render these sad cases less and less common, and our prognosis less unfavourable.

ON THE CAUSES OF DEATH FROM SYPHILIS.

It is a very prevalent idea that syphilis kills its thousands. Many medical men even believe that the affection acts as a sort of public scavenger, getting rid of the shoals of prostitutes that haunt our public thoroughfares. Any assertion that, according to careful observation, syphilis fulfilled no such mission, has been met with the reply—"But if prostitutes do not die from syphilis, what becomes of them?" Neither in Paris nor London does syphilis prove frequently fatal in hospitals. This cannot be denied; but the explanation attempted was, that prostitutes die in workhouses, in the slums, or in the low lodging-houses; that formerly they may have been buried, and have supplied the London dissecting-rooms with subjects, but that now they die of syphilis, drink, and misery.

I commenced some years ago a series of inquiries on this subject, and the first question which required an answer was—Is syphilis a fatal disease? I investigated the returns for the army, and found, in the first place, that venereal diseases were excessively common. Thus, among our land troops, one man in every five is annually affected with venereal disease; and in the navy, one in seven. In the merchant service, two out of every seven admitted into the *Dreadnought* are suffering under the complaint. In St. Bartholomew's Hospital I found that nearly one out of every two surgical out-patients applied on account of venereal affections.* Here, at least, there was something definite; syphilis was proved to be a very common disease, but was it a fatal one? The returns answer this in the negative. In the British army only two deaths from syphilis took place in seven years and a quarter; one of these followed from phagedena, and the other from syphilitic cachexia.

Not content, however, with these statistics, which may be to some extent open to correction, on the ground that the men are dismissed the army when incurably diseased, and die at home after having quitted the service, I appealed to the Registrar-General to collect for me all the deaths that syphilis produced, and with his usual politeness, and at considerable trouble, he extracted for me (in 1851) the number of deaths ascribable to venereal diseases which occurred in the Metropolis during the years 1846-7-8. These results were subsequently published in another work, but it may be interesting shortly to state a few of them here.

* I give here only the summary of these statistics, but those wishing to investigate the actual facts will find the subject fully treated of in my work "On Prostitution considered in its Moral, Social, and Sanitary Aspects." 1857. Page 33, *et seq.*

Table, distinguishing the Males from the Females, their Ages, and the Forms of the Disease of which they died.

	FEMALES.						MALES.		Of all ages.	Male and female of all ages.
Syphilis									14	43
Phagedenic disease									2	7
Disease of bone									2	5
Ulceration of Larynx ...									6	9
Venereal disease									3	7
Consumption									10	19
Chest affection.....									3	6
Paralysis									1	2
Cachexia and debility...									4	12
Erysipelas									9	17
All	16	32	13	9	3	73	13	25	54	127

The first thing that strikes the reader here is the paucity of fatal cases. Notwithstanding the frequency of the complaint in the Metropolis, only 127 deaths are noted during 156 weeks, out of a population amounting to more than 2,000,000, or on the average less than one a week.

In order to corroborate my assertions made some years ago, that syphilis was not a fatal disease, I again applied, in May, 1857, to Major Graham, and he kindly forwarded me the annexed table, which is curious as showing how large a proportion of the female mortality from syphilis falls upon infants and children under five years of age.

Deaths from Syphilis of Females at Different Ages, in England and Wales, and in London, in the year 1855.

	England & Wales.		London.
Under one year.....	269	.....	54
One year	28	.....	4
Two years	11	.....	—
Three years	7	.....	—
Four years.....	3	.....	1
Total under five years	318	.....	59
Five years.....	5	.....	—
Ten years	4	.....	1
Fifteen years.....	16	.....	2
Twenty years	18	.....	3
Twenty-five years.....	25	.....	2
Thirty years	25	.....	3
Thirty-five years	20	.....	3
Forty years	11	.....	3
Forty-five years	13	.....	1
Fifty years.....	5	.....	—
Fifty-five years	4	.....	1
Sixty years	3	.....	—
Sixty-five years.....	1	.....	—
Total, all ages	468	.....	78

To test the accuracy of these views, and to make sure that the former year was not an exceptional one, Major Graham, at my request, compiled the following return.

The following list contains deaths of adults by Syphilis, in London, in 52 weeks, from April 25, 1857, to April 24, 1858.

This list shows the sex, age, disease and duration of disease, when this last is stated in the Register.

FEMALES

Above one year of age.

AGE.	DISEASE.
18.	Syphilis debility.
18.	Neglected syphilis.
19.	Syphilis, constitutional irritation.
19.	Sloughing venereal sore.
19.	Syphilis, exhaustion
20.	Syphilis and acute pneumonia.
21.	Tertiary syphilis.
23.	Syphilis.
25.	Syphilitic phthisis.
25.	Syphilitic periostitis.
28.	Syphilis.
28.	Syphilitic rupia, hemiplegia (fourteen days).
30.	Secondary symptoms of long duration.
31.	Phthisis, secondary syphilis.
33.	Venereal, heart affection.
36.	Syphilis, erysipelas (ten days); bed sores (five days—wife of sailor.)
39.	Secondary syphilis, and wasting of long standing.
40.	Syphilis, secondary (four years).
41.	Syphilis, years since cancer of womb, one year.
42.	Sequel of syphilis (five years), fever.
44.	Syphilitic cachexia.
50.	Syphilitic phthisis.
50.	Tertiary syphilis, caries.
50.	Chronic syphilis (many years).
67.	Syphilis, disease of bone and ulcer (five years).

Total, 25 females.

MALES.

Above one year of age.

AGE.	DISEASE.
19.	Syphilis, sloughing.
19.	Syphilitic ulceration of larynx (pneumonia six days).
22.	Secondary syphilis; neuralgic rheumatism; cerebral effusion.
23.	Syphilitic laryngitis, pneumonia (<i>post-mortem</i>).
24.	Syphilis and coma (forty-eight hours).
26.	Meningitis (one week), syphilis.
27.	Gonorrhœa, phymosis, congestion of lung and brain.
27.	Ulcer in groin, erysipelas, peritonitis (<i>post-mortem</i>).
29.	Syphilis, phthisis.
30.	Syphilitic ulceration of larynx (<i>post-mortem</i>).
33.	Syphilis.
34.	Syphilis, diseased bones, &c. (several years); phthisis (two months).
36.	Syphilis, ulceration of throat.
42.	Syphilis, Bright's disease.
58.	Diseased lungs, secondary syphilis.

Total, 15.

After an interval of ten years, then, in which more accurate registration has taken place, the conclusions to be gathered from the former table are corroborated. These statistics demonstrate that syphilis does not kill its thousands. The most cursory observation is sufficient to show that the disease no longer maims its victims by causing loss of the nose, or those fearful affections of the face that all the senior members of the profession must recollect as witnessing in their pupillage, but of which our successors will be happily ignorant, and perhaps doubt whether such frightful inflictions can ever have existed.

The strict accordance of these figures with those collected ten years before, is strikingly manifest; twenty-five deaths among women occurring in 1858, and twenty-four and a fraction is returned as the average of three years ending in 1848. So in men: fifteen was the number in 1858, and eighteen as the average of three years ending in 1848. In both tables the same greater proportion of deaths among children under one year of age is strikingly shown.

So rare, indeed, is death from uncomplicated syphilis, that many a surgeon has never witnessed a single instance; and those attached to hospitals where venereal diseases are specially treated have so few opportunities of witnessing post-mortems of persons who have succumbed to them, that it becomes interesting to inquire how they produced death. This is answered by the Registrar-General's return. In the first place, erysipelas may attack the sores of any patient entering an hospital, and a certain number of syphilitic patients, as well as of other classes, die from this cause. Syphilis, therefore, acted but a secondary part in producing the fatal termination of the seventeen cases of erysipelas in the first table.

We sometimes, in the present day, meet with death from sloughing phagedena, but rarely without complication. I lately, for instance, saw it in a man who died, not from its severity, but from debility and loss of blood at stool, which nothing could check, and which was found to depend upon ulceration in the intestines. I have already alluded at p. 325 to the phagedena at St. Giles's Workhouse. I find that this form of the disease is now unknown there, and the preceding table records only seven deaths from phagedena throughout London in three years. I have already stated (p. 325), that a short time ago an epidemic of this affection was spreading to such an extent through the wards of St. Bartholomew's Hospital (having already caused the death of, I believe, three women), that the authorities were most reluctantly obliged to close them for a time against syphilitic patients, in order to arrest what might have proved a frightful scourge.

Dr. MacCarthy tells us,* "In Paris, out of nine patients affected with phagedenic serpiginous chancre, four died from the progress of the disease and colliquative diarrhoea, and on opening these I found violent inflammation of the entire colon and rectum, and I observed the mucous membrane sprinkled over with ulcerations.

Ormerod mentions† that a patient died at St. Bartholomew's from giving way of a vessel in the upper part of the vagina.

Wilde states (p. 186), "That seven deaths were reported as having

* "Thesis," p. 17. 1844.

† "Clinical Observations."

taken place from syphilis in Vienna in 1839-40 ; five the result of bubo, probably sloughing ; one from sore-throat ; and one from general secondary symptoms. Of these, three were males, and only four females."

The whole mortality of prostitutes at St. Lazare, the female venereal hospital at Paris, was but sixteen in 1853, and seventeen in 1854. The deaths were principally caused by non-syphilitic affections, the germs of which they had contracted before coming into hospital.

In the year 1855, there were fourteen deaths at the Lourcine Hospital out of 1834 patients admitted, and of these only one was attributed to syphilis.

But if syphilis be a retribution, it would appear to be inflicted on the children with far greater severity than on the parents ; for out of eighty-five infants, who in 1854 were born at *l'Hôpital de Lourcine*, or being under two years of age, were admitted with their mothers, I find that no less than twenty-four perished from the effects of this disease. Out of sixty children at the same hospital in 1855, there were ten deaths.

The results seem to be that, however syphilis may embitter life, or by complicating other diseases hasten death, still that death following directly from primary or secondary symptoms is of very rare occurrence. I do not, in fact, very well see how it could be produced, unless erysipelas, fever, or acute inflammatory disease set in and destroyed the patient.

Syphilis is most frequently fatal when it has reached the tertiary form, in the neglected cases of which we observe its greatest ravages. Patients are destroyed by the deposit of bone or gummata, which, pressing on the brain, produces paralysis, convulsions, and other nervous phenomena. In other cases caries of bones takes place, and exhaustion causes death. Occasionally the cartilages of the larynx fall in, and the patient dies asphyxiated. Lastly, syphilitic cachexia, which we have just considered, sometimes comes on, and gradually leads to a fatal termination.* Mr. West, of Birmingham, has lately published an interesting paper in the *Dublin Quarterly Journal of Medical Science*, Feb., 1860, showing that death may follow from stricture of the œsophagus, brought about by ulceration of that passage, consequent on tertiary syphilis. The case he mentions proved fatal in spite of all the treatment he employed.

* "Prostitution considered in its Moral, Social, and Sanitary Aspects." By William Acton, 1857. Page 58, *et seq.*

CHAPTER IV.

MONOMANIA SYPHILITICA

SYPHILIPHOBIA.

SYPHILIPHOBIA ! Critics smile at this newly-coined word, as I myself did many years ago on hearing M. Ricord propose to write an article on this subject. As he has not yet published his opinions on this form of monomania, I shall in the following pages describe a class of cases private practitioners must often meet with.

Although the instances I cite here occurred many years since, I have seen no reason to believe that the general features of syphiliphobia are not still the same. The disease is perhaps somewhat more common ; and we may add to the list an affection which the modern quack advertisers of so-called specifics for spermatorrhœa have created or at least aggravated:

We have also still to regret that our writers on mental diseases have not given us their opinions on these cases, which they must frequently meet with in practice.

This class of complaints stands in direct opposition to feigned diseases ; instead of our patients simulating certain affections or complaining of sensations for the mere purpose of misleading the medical man, the syphiliphobist describes only what by an exaltation of nervous sensibility he fully believes he sees or feels.* Like hysteria, syphiliphobia will assume every form of venereal disease found or described in books, and in a tenfold degree, or like hypochondriasis, every trifling ailment will be exaggerated till the medical man is unable to distinguish what his patient really feels and what he supposes he feels.

Did isolated cases only now and then occur, perhaps they might not deserve attention, but so numerous are they in a large capital like London, so anxious are the sufferers to obtain relief by consulting every man who can be supposed to offer them any means of relief, that they spend fortunes in travelling about and visiting every quack who gulls the public by assuming a knowledge which he does not possess.

* Although there is an apparent explanation of some delusions of the kind now mentioned in the morbid condition of the nerves of sense, many delusions neither admit of this or of any other probable explanation. We may conjecture that they arise in the mind, and for a certain time, or permanently, prevail in consequence of a defective innervation of some part of the brain analogous to what is observed in certain partial impairments of sensation.—(Dr. Couolly's "Lectures," *Lancet*, May 23, 1846.)

I have been consulted by a great number of persons who are fearful they suffer from syphilis in one form or another ; and although many of these sufferers can be said to have syphilis only in their imagination, others have presented anomalous symptoms of disease which might mislead the best-educated medical man, and make him doubt if it really were syphilis he was called on to treat, and not the phantom above spoken of. The mistakes are most liable to occur from the surgeon depending upon the history given by the patient, rather than on the appearances which he meets with. The reader will, perhaps, best study the various forms of the affection by the perusal of the following cases which have occurred in private practice.

Syphiliphobia resembling Gonorrhœa Preputialis according to the Statement of the Patient.

May 12, 1844.—A gentleman called to-day to show me the slightest possible redness between the glans and prepuce, about which he seemed very anxious. To judge from his questions, I presumed he had been toying with women and had become conscience-stricken, and anxious to know if the trifling symptoms could be venereal ; he viewed the natural appearances of the part as abnormal ; the ring of little glands around the corona glandis appeared to him to betoken disease ; he was particularly anxious to ascertain if he could have possibly contracted venereal disease through the trousers ? were the few spots of acne which existed on his back, and a patch of eczema on his chest, venereal ? Such were some of the questions he had taken down in his pocket-book, and was anxious to ask my opinion on. I told him the symptoms were not venereal ; this hardly satisfied him, and he again repeated, had I not seen slight venereal symptoms occasionally like these ? Could indigestion, or non-erection, or rather non-emission, and excited feelings, produce these consequences ? Such was the drift of his questions, and in appearance, conversation, and manner, he was a good specimen of the syphiliphobist. I prescribed for him dry lint between the glans and prepuce, recommending the use of tannic acid and water gr. ij ad ℥, and he promised to let me know the result.

The forms that syphiliphobia may assume are as diversified as is hysteria, and their treatment may puzzle a medical man as much. No sooner does an advertisement of my book appear in the public journals, than I am sure to be consulted by some of this class of patients ; and they follow the advice of the advertising quacks, in "being very particular in the description of their symptoms." The above case may give some idea of their questions, and of one form of the complaint. Persons when labouring under this malady, are not only very particular about their own symptoms and minutely observant of their feelings, but exceedingly curious in matters relative to the healthy functions or supposed actions of the organs of generation. They are touchy, and become angry at any question which induces them to think that we are inclined to treat their complaints lightly. If any attempts are made to exaggerate their sufferings, many have sufficient tact to see that the practitioner is trying to frighten them,

and they resent the schemes of the man who may wish to rob them by acting on their fears.

Many have assured me that they have no great confidence in quackery, but that they have failed in inducing their regular medical attendant to take any interest in their cases, and that these advertising firms do not snub them. They confess to a kind of half belief, that the quacks having seen a great number of cases similar to their own, may be able to give them relief.

Such patients will tell you that they despise, at the same time that they go to the advertising firms with a string of questions which they have crammed from books, and wish to learn how to answer with regard to their own cases.

I have had patients under my care who have made the round of the profession, legitimate and illegitimate; there are a few that will tell you what John Pearson did in their case, as well as relate anecdotes of Dr. Eady; they have even been into the provinces to consult the advertising firms there. After having personally consulted you (if they live in the country), they will attempt to keep up a correspondence, and one of their greatest pleasures appears to consist in endeavouring to convict you of having misunderstood or misstated their symptoms; but the usual tenor of their letters is, that they have discovered a new symptom, which they give in full, or describe verbatim from some standard work, or some of those trashy publications daily advertised. •

These more or less imaginary ailments are not confined to the uneducated.

The medical profession themselves seem particularly liable to this form of monomania syphilitica; the disease in them generally assumes the form of the sequelæ of syphilis. So long ago as 1720, Turner, a celebrated writer on syphilis, related four cases; two of these were professional brethren; showing that in his day an author on syphilis had the same embarrassments as a surgeon of the present age. I will relate a case or two that came under my own notice as good specimens; they were taken down in 1846, since then I have ceased to record instances, as they no longer present features of novelty.

Monomania Syphilitica assuming the Characters of Sequelæ of Syphilis.

April 28, 1846.—A gentleman, wellknown in the medical profession, called on me complaining of the remains of a syphilitic complaint. He pointed to a few reddish spots on his forehead, a pimple inside his nose, which arose from an inflamed hair follicle. He also complained of pains in the palate, blood coming from the nostril as shown on his handkerchief when he blew his nose, and discharge; none of these, however, I could verify. His history was as follows:—About two years before he had suffered from excoriation, but never had induration of any kind; about eighteen months since, boils broke out, which he believed to be, and treated as syphilitic, and took blue pill till it affected his mouth; the symptoms disappeared, but returned again in some form or other, for which he took mercury and iodide of potassium. I could not ascertain that the eruption was in any

way characteristic ; in fact, I believe this gentleman never had had syphilis ; during the last six weeks he had been taking corrosive sublimate, increasing the dose to one-fourth of a grain three times a day ; this had as yet produced no tenderness of gums or symptoms of salivation. I recommended him to leave off mercury and take iron, and on the recurrence of any characteristic symptoms to apply to me at once, when I could satisfy myself of their nature ; he promised to return.

June 28.—This gentleman came back, showing me the septum nasi which was red, and the back of the throat covered with a green dry secretion ; had taken iron for some time with benefit. I told him I could see no syphilitic symptom, although the membrane was slightly red ; pains, he asserts, were violent in the nose. I bid him return if ulceration occurred.

July, 1849.—I have seen this gentleman several times since ; he is now himself convinced that his complaint was not syphilitic, and that he took mercury unnecessarily.

Monomania Syphilitica assuming the Characters of Disease in the Patient's own Nostril as well as on the Body of the Offspring.

A well-known London physician came to me with a history similar to the former, but no persuasion on my part could shake his opinion that he had not disease of the septum nasi, which, according to his account, was *about* to fall in. There was considerable redness of the mucous membrane, as well as acne on the body. These appearances, coupled with pains in his shin-bones, convinced my patient that he was suffering under the most violent form of syphilis. Nothing I could say appeared to have any influence on him, and he had been taking mercury to some extent, which he told me was the only thing that had saved him, or would protect him. He candidly told me that his only object in coming to me was to obtain my sanction for continuing to take the mineral to the fullest effects of salivation. I need not say that I recommended all mercury to be left off, and iron and tonics to be given.

After many visits, finding that he was unable to alter my opinion, and probably shaken in his own belief, he brought me one day, carefully wrapped up in paper, what he stated was a convincing proof that I had been wrong all along, and what fully corroborated his own suspicions. This was no less (patient loquitur) than a large portion of bone which had come away from his nostril. I looked at the substance, which at first sight presented something of the appearance of a portion of dead bone, and might have been mistaken for it ; but on close examination it turned out to be nothing more than a portion of the core of an apple, and the occurrence is the more interesting inasmuch as I do not believe the patient was desirous of deceiving me. The exposure of his pet opinion, however, in no way discouraged him ; during the next few months, his fears turned on the probability of his child becoming affected with syphilis (he had lately married, and his wife was pregnant), and he returned several times subsequently, complaining that the child had the snuffles, and was infected. Ultimately, however, as the infant grew, he lost this impression, but

was still firmly convinced that he was labouring under latent syphilis, which would one day break out. Now, with the exception of this deeply-rooted opinion, there are few men in the profession who have correcter notions on medical subjects; but I am obliged to class him among my monomaniacs, and regret the existence of a deep-rooted idea which embitters his existence.*

Before quitting the subject, I may mention that medical men appear to form very erroneous notions on what they call an unhealthy state of the throat and nostril. There may be redness of both one and the other without disease; why should not redness of these parts, varicose veins or patches, exist in the nostril as well as on the face generally or on the nose? When, however, any symptoms or suspicions of syphilis exist, mercury is often far too readily given. The same may be said of increased secretion of the mucous membrane of the nostril; some persons' mucous membranes secrete habitually either a thick tenacious or a serous-looking discharge. I lately had under my care a gentleman, whose nostrils were red, secreting a most profuse discharge, which several surgeons had seen and called syphilitic, but which had no relation to that complaint, although it presented the most obstinate resistance to the usual remedies I ever knew. Such cases, however, show that medical men should be very guarded in their opinions. (See page 247.)

Another form of *Syphiliphobia* consists in our patients referring their ideal complaint to the *testes*. I have already made some reference to this at page 168, under the head of Irritable Testis. I have been consulted several times by patients who lodge complaints against the testes. Thus, "Doctor, are my testicles of a proper size? are they not too large?" "Are they not too small? is not the epididymis the seat of disease?" You make an examination to satisfy them, and varieties in these organs are very common. But what has astonished me not a little is the various modes in which patients themselves handle these organs: one will squeeze them, and say that pressure gives no suffering, although at times they experience shooting pains in the organ; another can hardly bear the testes to be exposed to the air; and, when the surgeon attempts to examine them, the one party will tell you that you may squeeze harder, others will not allow you to employ the most gentle pressure. These are among the earlier symptoms probably of that anomalous disease called irritable testis, which we class under the head of syphiliphobia.

Sometimes the patient accuses the *bladder*, at other times the *prostate*, as being the seat of very peculiar symptoms, which have only this in common,—that without any apparent cause or symptom, his sufferings are exaggerated to a degree that we do not really meet with in the disease the patient supposes himself affected with. A most lamentable case of this nature was made public a few years ago, in consequence of the sufferer having committed suicide.

There is something very peculiar in the aspect of this class of patients, which, coupled with the exaggerations of symptoms, leaves the surgeon in little doubt on the nature of the complaint; but

* This patient, like the last, now (1860) no longer consults me for these morbid symptoms; family cares and anxieties have driven away his careless fears.

although the diagnosis may be easy, the treatment is by no means successful. Abernethy's prescription for the idle man, that he should live on sixpence a day and earn it, avails nothing; for we meet with these complaints among the working classes, not only in London, but in the country.

M. Ricord used to state that stone-masons, stone-sawyers, tailors, and shoemakers, were the trades that most frequently suffered from these imaginary affections, and in the order in which I have classed them. Of all nations by whom he had been consulted, he said that the Poles most frequently laboured under the hallucination that the functions of their testes were impaired in some way or other.

The belief that an imaginary malady may terminate in a real organic change is sanctioned by the following opinions:—

"It has been maintained," says Forbes Winslow, "that the persistent direction of the volitional power to a particular organ or structure will eventually induce a morbid activity in the part, and give rise to lesions in the organic tissue itself. In many cases of hypochondriasis, a disease frequently associated with some form of visceral derangement, I have no doubt the sufferings, both mental and physical, are often aggravated by the patient imagining some particular structure or viscus to be the seat of disease; and from that circumstance, the attention being constantly directed to the organ, actual molecular changes in the organic elements of the part are induced. The persistent current of mental impulse, emotion, or volition towards an organ, impels to it an amount of nervous energy and blood sufficient to derange the circulation, and thus interfere with the function of nutrition, and induce organic alterations in the tissue."—"Lettsomian Lectures.")

It is to be regretted that those who have written on the subject have not discovered how often they have been imposed on by these patients, whose urethras have too often paid the penalties for the experiments which have been made by surgeons treating these complaints as true cases of spermatorrhœa.

The inmate of many a lunatic asylum could give us a sad catalogue of errors of diagnosis. Did he possess all his reasoning faculties, he could tell us that the monomania syphilitica was countenanced early in life by many a designing knave who robbed him of his money, while encouraging his fancies; that this charlatan, whether professional or not, thought it necessary to carry out his views by frequent cauterization, which had terminated in the present affections of the genital organs, that virtually produced the disease he once so much dreaded. But this view of the case is happily not present to his mind, and he goes to the grave the victim of his own imagination, and a martyr to the injudicious treatment which has been pursued.

The TREATMENT of patients labouring under monomania syphilitica requires some tact and knowledge of the world. Experience has taught me that the suggestions I have given in my work on the "Functions and Disorders of the Reproductive Organs" are sound, and I need make no apology for introducing them here.

"During a personal interview with sufferers from syphiliphobia, I never discuss symptoms with them, or give them any opinion *pro* or *con*.

I attempt by my manner to show them that I will investigate their cases as well as those of other people, give them the same consideration, and that I will come to no hasty conclusion. I never allow them to run into disquisitions foreign to the subject; but endeavour to confine them to the particular case, and avoid as much as possible hearing the opinions of others. I thus mature my own views, and tell them that I shall have no objection to put them in writing. I agree with Roubaud in much of the following advice:—

“‘I do not think it desirable in the first instance to dissuade the patient, or boldly attack his fallacies or errors. Begin by gaining his confidence; having effected this, become his friend, and subdue him rather by words of consolation than by the imperious tone of scientific authority. You will otherwise cause him to doubt your abilities, and suspicion in the breast of *malade imaginaire*, or hypochondriacal subject, is a difficult thing to do away with. It is better, then, at first, to appear to believe in the reality of the importance of his complaint, prescribe him some apparently active remedy, and insist on the prognosis as favourable. When the patient has gained implicit confidence, or if he will listen to reason, the surgeon may then attack the prejudice, combat its absurdity by serious arguments which may appear to him best suited to the occasion. Take care, however, how you do this; feel your way, study well his disposition. The least false step may lose you the ground already gained. These patients are frightened by the least suspicion. When you have decided upon your course, let nothing, however, divert you. The patient should be told that a medical man has duties to perform, that the path of error must be retraced, and his own feelings no longer be studied.’

“The most difficult thing in the treatment of these cases is to bring the patients to exercise self-control. They have never been taught it early in life, and they have never practised it since they have arrived at adult age; yet without its exercise all our endeavours will fail. This self-denial must be mental as well as physical; the sufferers must be impressed with a full determination not to allow themselves to dwell on or think of their complaints. This self-treatment is indispensable; these moral gymnastics are absolutely necessary, and they may be much assisted by regular exercise and great physical exertion, accompanied by a proper *régime*. A return to a cheerful temper and a bright view of the case will tend likewise to the cure. The judicious treatment of a spoilt child must be the type for the surgeon to follow. He must display tact and knowledge of men, for what will succeed with the illiterate will fail with the imaginative and the intellectual, who must be reasoned with and convinced before much can be done for them. Above all things, a favourable prognosis should be given, where not inconsistent with conviction.”*

If any reasonable suspicion of latent disease can be entertained, I watch it; and at the same time improve the patient's general health. I take advantage of any confidence I may have gained, to remove the puerile alarm, by directing their medical inquiries (for these patients are great readers of books) to such portions of authors as are likely to

* Acton on the “Functions and Disorders of the Reproductive Organs,” 2nd edition, p. 93.

set them right in their preconceived notions. Assertion is of no use ; the surgeon must try to convince his patient ; some will yield their opinions, others become more stubborn in their error ; the latter class, if incorrigible, I refuse to prescribe for. In leaving me, I am well aware they find others that will "minister to a mind diseased," but I fear ultimately it will be in some asylum. The former class, by judicious moral treatment, with a very little physic, and very much exercise, particularly gymnastics, recover entirely. I hope I have been the instrument of restoring happiness to many poor creatures, whose sufferings have been pooh-poohed by the heads of the profession, and who have been made fools of by quacks. Further directions about treatment it is impossible to give, for the affection assumes all the Protean shades of monomania,—the syphilitic form of which is scarcely hinted at by English authors. .

CHAPTER V.

INFANTILE SYPHILIS.

SYNONYMOUS TERMS.—In the various works on diseases of children, the complaint I am about to describe has been treated of under the terms *Infantile—Congenital—Hereditary Syphilis*, or *Syphilis in Children*. We shall prefer the term Infantile Syphilis, inasmuch as it is the most comprehensive, and includes all the cases, without prejudging the manner in which the disease may occur; but let the reader recollect that the descriptions are confined to the affections in infants under one year of age, and therefore we use the term syphilis in infants rather than syphilis in children.

In the following pages I shall give the results of my own observations rather than those which others have recorded; for it will be noticed, by any who takes the trouble to investigate the subject, that authors have generally copied one another, especially in taking for granted much on which there is great doubt, and in viewing facts which permit of quite a different interpretation as demonstrations of particular theories. I shall not, therefore, cite many authorities, but rather endeavour to give a clear, concise account of the disease as I have observed it at the present day. I shall, nevertheless, subjoin in foot-notes all really important evidence from other sources, whether corroborative of or opposed to the opinions I myself entertain, leaving the reader to carry the investigation further if he chooses.

DEFINITION.—The terms congenital—hereditary—or infantile syphilis, have been usually employed to describe certain specific affections (to be hereafter described) of the foetus, which it is said may affect it during its intra-uterine life, and which, if they show themselves in the infant after birth, must be considered to depend upon an hereditary taint communicated by the parents, or, as some erroneously (as I think) suppose, upon disease contracted from wet-nurses. In the course of this chapter I shall not only describe these affections, but add some further particulars of infantile syphilis contracted without the parents being affected, and discuss how far wet-nurses may or may not be able to contaminate their foster-children, and how far dry-nursing may act in the same way.

SYMPTOMS.—The offspring of parents labouring under syphilis may be born at the full period, in apparently perfect health: * in other

* "We meet with a large number who come into the world with every appearance of the finest health; congenital debility appears by no means allied to the ulterior development of venereal symptoms."—(Dr. Trousseau, "Archives Générales," tom. xv. p. 151.)

instances the children are puny, small, and very delicate. This striking difference seems to depend upon the following circumstances—viz., whether one or both parents are affected; whether the disease has only recently obtained a footing in the infected parent's system; or whether it has nearly worn itself out, a tendency to which I have noticed in good constitutions, and an instance of which occurred in the case of Y. Z., mentioned at p. 551.

Can the disease appear at birth? This is a question very difficult to answer. If the surgeon depends upon the statement of patients, he may believe at first that a child *can* be born with traces of the disease; but, on more closely questioning the parents, it will be generally found that at the very time of birth the child was free from the complaint. The disease, however, may have occurred so soon after birth as to show that the infant must have been then infected, and the commencement of the complaint is therefore dated from that time.* As far as my own observation goes, and I have desired a great number of patients to let me see their children immediately after the accouchement, the disease was not noticeable for the first few days of extra-uterine life; its earliest development took place from ten days to two months after birth. The mother at first observes the child's breathing to be peculiar, it has the *snuffles* as nurses say; that is, the breathing is thick, particularly while the child is suckling; and the air, in passing through the nose, gives you the idea the child has a cold, doubtless depending upon slight swelling of the mucous membrane. In a short time a muco-purulent discharge begins to flow from the nostrils, which soon become plugged-up. In some cases this symptom is the only one noticed; in others the nostrils remain unaffected, and the first traces of disease are observed in the occurrence of simple erythema; the nates soon become spreathed, and the nurse's attention is called to redness and soreness of the anus, thighs, and genital organs. This symptom is often attributed to teething, but does not yield to that usual nursery panacea, violet powder. In most cases the affection is not confined to a mere redness, but excoriation follows, and is succeeded by a distinct eruption, assuming the form of large, flat, moist papules, which we call condylomata, and which will be found described at p. 432, closely resembling those seen in Plate VII. These mucous tubercles are very characteristic, in size equal to a split pea, sometimes distinct, in other instances confluent, and elevated above the surrounding skin, which is of the colour of boiled ham. The tubercles are generally dry on their surface in parts and

* Pearson says, "We have not seen one instance of a child born with lues; it generally does not appear till about the fourteenth day after birth, or from fourteen days to a month."—("Manuscript Lectures," p. 95.)

Trousseau says, "It is excessively rare to witness constitutional syphilis appear in new-born infants at the time of birth; it is still less frequently produced during pregnancy. We have never met with any manifestation of it thus early. M. Huguer, whose authority no one can question, tells us that he never saw a single instance of an infant born with well-characterized symptoms of infection at the Ourcino Hospital, which is specially devoted to syphilitic women."—(*Loc. cit.*, p. 149.)

"The opposite limit—viz., how late the disease may appear, and after which we find no risk of the disease appearing—we find very difficult to determine. We have never seen it appear later than the seventh month."—(*Loc. cit.*, pp. 153, 154.)

become scaly. Sometimes they are moist, and secrete a fetid discharge, which excoriates the surrounding surface, producing erythema and eczema, and is often attended with psoriasis of the hands and feet; these presently crack and cause great pain; the child loses flesh; and, if the complaint is not treated, gradually sinks.

This is, of course, a description of an aggravated case. In other instances the child does not lose its natural appearance, on the contrary, it is a picture of health, and is brought to you because it has the piles (as the nurse calls a ring of condylomata all around the margin of the anus), which may be the only symptom. This, however, usually occurs in rather older children: still I meet with isolated symptoms in the new-born infant, which seem to result from the hereditary disease having nearly worn itself out in the parent, or from having to contend with a strong constitution in the child. Lastly, the affection may assume many of the characteristics of relapses in children of a more advanced age. The corner of the child's lips may become covered with condylomata, and have a great tendency to crack, forming syphilitic psoriasis labialis, or the papules may be covered with successive scales, which, falling off, present a raw excoriated surface, and are very difficult of cure, as the cicatrices tear whenever the child sucks. The tongue is sprinkled over with white spots as large as split peas, and has an appearance as if its surface had been touched and whitened with caustic; this appearance extends to the throat and probably to the intestines, producing diarrhoea, or mucous and sanguinolent discharges. The German writers have examined these secretions from the lips and mouth, and state that they contain cryptogamic plants; hence, apparently, their belief in the contagiousness of these complaints.

Disease of the bone is a very rare affection in children. When noticed it seems to occur, as stated at p. 492, rather as a result of disease primarily affecting the mucous membrane of the nose and destroying the periosteum or perichondrium, so as to produce death of the delicate bone, than from disease commencing in the bones themselves. Disease may, however, be occasionally witnessed in the ossa nasi, which I have seen fall in; but the disease generally proves fatal in children before it has attacked the osseous system.

CAUSES.—In the definition of infantile syphilis, I have stated above that the disease depends upon an hereditary taint communicated by the parents, or, as some say (in my opinion erroneously) by the wet-nurses. I purpose in the following pages to examine the probable means by which the infant can be hereditarily infected. The subject is a novel one, and has never been fully treated of by authors. This is strange, considering how interesting an enquiry of this nature should be to physiologists. It will be seen that the important facts I shall bring forward throw considerable light on the subject of impregnation. Syphilis, I think, is the only specific disease which can be satisfactorily investigated in reference to its morbid products, all other complaints with which I am acquainted, present difficulties which are insurmountable. If, in the following pages, I shall be able to elucidate any of the important questions of contagion, and illustrate the obscure subject of

impregnation, I shall be amply repaid. I hope in addition to furnish such evidence as may be considered of importance in deciding many questions in medical jurisprudence which hitherto have not attracted that attention which, I think, they deserve.

The modus operandi of hereditary infection will, I think, be best understood by considering successively how far the mother, the father, or the nurse, may be able to infect the child, and in pursuance of this plan, I shall first treat, *under the head of causes*, of the

INFLUENCE OF THE MOTHER.

It might naturally be expected that any specific disease in the mother would exercise a very great influence on the fœtus with which she is pregnant; the free interchange of the elements of the blood between the fœtal and maternal placenta would lead us to expect that a child could scarcely escape any general contamination of the blood of the mother; and we usually find in practice, that a female suffering under the secondary symptoms of syphilis will produce an infant that, soon after birth, will show unequivocal marks of the disease thus hereditarily transmitted. The mother may directly contaminate her offspring, independently of the father, who may be perfectly healthy.

To make my meaning more clearly understood, I cite a case. A healthy woman, A., marries B., a healthy man, neither party having ever suffered from syphilis; B., soon after marriage, is obliged to quit his wife, who is a few months gone in the family way; she has intercourse with another man, who communicates to her an indurated chancre, followed by secondary symptoms: the child will probably be diseased solely through the vital fluids of the mother.

If all cases were as simple as the one above cited, the medical man would arrive pretty easily at his conclusions; but we are ignorant what is the latest period of pregnancy at which a woman thus becoming infected can transmit the disease to her infant. This most important point, however, deserves the particular attention of the profession; neither M. Ricord nor myself have enough facts to enable us to answer such a question; but in the interesting case of Mrs. M. M. (p. 557), her statement goes to prove that she was infected as late as the seventh month, and yet gave birth to a child that became diseased.

To arrive at this information, I would suggest that a table be kept as follows:—

Impregnation; say January.	Indurated Chancre; say January or June.	Secondary Symptoms in mother made their appearance in.	Child born, say September, healthy or infected.

Some fifty cases thus tabulated would soon settle the question, and might, in subsequent cases, assist the surgeon in sifting evidence where deception is intended ; but, as in the majority of such cases the mother may attempt to deceive the medical man, great attention must be paid to the dates, and it must be ascertained if the husband is healthy, otherwise the conclusions will be very erroneous.

In cases, however, where the husband infects the wife, the dates could be ascertained without any great fear of error, and would form valuable statistical evidence should it be published. I shall at all times feel much obliged by my professional brethren forwarding to me such accounts, as they will fill up one of the few lacunæ now wanting to complete the subject.

Many accoucheurs believe that syphilis in the mother is a common cause of abortion, and that premature confinement at the seventh month, as well as the expulsion of a fœtus whose skin peels off, are symptoms of syphilis. I subjoin a letter, published in the *Northern Journal*, for 1844, in which my reasons against such opinions are given.

"In the first edition of my work on venereal diseases, I ventured to call in question the truth of several ancient dogmas held in great veneration by accoucheurs of the last century, and which I was inclined to believe were admitted on too slight grounds by some even in the year 1840. In the last number of the *Northern Journal* I find Dr. Campbell somewhat indignant at my questioning these opinions, which he states, '*men of experience, who have been engaged in practice half a century or more, maintained to be true.*'

"On this occasion I purpose stating the points of difference between Dr. Campbell and myself.

"I believe that accoucheurs are in error in attributing solely to syphilis the occurrence of abortion about the seventh month, and my reasons are the following :—

"1st. In the wards of hospitals devoted to female venereal patients, labouring under secondary symptoms, abortions are not more frequently observed at the seventh month than at any other period. 2nd. These females, in spite of all moral and physical impressions, frequently carry their children to the full period ; and at the time of birth we meet with the infant quite healthy, or only sickening some weeks after. Such being the natural course of syphilis when observed on a large scale, I hesitate in concluding that syphilis produces abortion at the seventh month, or that the circumstance of a child being born dead or putrid is in itself of any value in the diagnosis.

"Dr. Campbell, on the contrary, is an implicit believer in the opinion, that when women miscarry about the seventh month, and the child is putrid, we must look to syphilis as the cause, and that a cure will be effected by giving mercury to both parents. The reason he assigns for this belief is, having witnessed the occurrence very frequently ; and he gives the two following cases in support of his opinion :—

"A physician contracted what he believed to be a chancre ; six months after, he married ; three children were successively prematurely born ; the first lived only a few hours ; the second infant was born

between the sixth and seventh month, and lived eight hours; the third labour came on in the seventh month, the fœtus dead and decomposed; no trace of syphilis was observed in either parent; the father and mother were salivated, and the next child was born vigorous and free from any syphilitic taint.

"2nd Case.—Seventeen years previous to marriage, a gentleman suffered from syphilis, which he was assured *was cured*, although an impression remained, *on his part*, that the disease had not been completely removed. Both parents were apparently in perfect health; the first child was born in the early part of the eighth month of gestation, was delicate, and lived eleven days; the second birth happened in the seventh month, the infant survived only an hour and a half. The third delivery occurred in the sixth month, when a fœtus much decomposed was produced; the husband and wife were salivated, and a living healthy small female fœtus was born at the close of the eighth month.

"Having related these two cases, Dr. Campbell criticises my opinions, and states: 1st, that information derived from venereal hospitals is, to say the least, questionable; 2nd, that my field for observation was far too limited, considering that, according to the investigations of Duchatelet, not more than six prostitutes in one thousand, on an average, *conceived* in the course of one year; and, 3rd, that opinions based on such data cannot be put in competition with the experience of men who have been half a century or more engaged in practice.

"The reader must observe that, if Dr. Campbell admits syphilis as the cause of abortion in the above-cited cases, he will be obliged to believe that two parents, neither of whom have had secondary symptoms, but enjoy excellent health, will produce, not syphilitic children in the sense usually understood by authors, but infants that present no recognised syphilitic symptoms, unless premature confinement or a putrid fœtus be considered as such; thus excluding all other causes of abortion, and recognising as the only possible origin of the phenomena a chancre without any of its attendant sequelæ.

"In the second case, Dr. Campbell and those who agree with him, must believe that chancre, unattended by secondary symptoms, will, after seventeen years, show itself, not in its ordinary forms, but in certain symptoms or sequelæ—viz., the premature confinement of the mother, and the death of the fœtus, which are assumed to be sufficient to prove syphilis must have existed. This doctrine will, I think, be at once denied by all practitioners who have allowed their patients to marry, and observed the healthy offspring of those who in early life contracted chancres which were not followed by secondary symptoms. In reply to Dr. Campbell's first objection to my opinions, I must repeat, that a large number of pregnant women suffering from syphilis were under my care at the venereal hospitals in Paris, but that *I did not observe* this liability to abortion during the seventh month.

"Dr. Campbell's statement, on the authority of Duchatelet, that only six prostitutes in a thousand *conceived* in the course of one year, appeared so much at variance with everything I had witnessed, that I referred to Duchatelet's book, and find, as I expected, that Dr. Campbell has completely misunderstood the French author, who, at

the commencement of the chapter (De la Fécondité chez les Prostituées), says, 'En resumant toutes les réponses qui m'ont été faites, et ce que j'ai trouvé dans *quelques* livres anciens et modernes, j'ai du tirer cette conclusion, que mille prostituées fournissent à peine six *accouchements** dans la courant d'une année ;' which I should translate as follows : 'Judging from the answers I have received, and what I have found in *some* ancient and modern works, I ought to draw this conclusion, that a thousand prostitutes furnish scarcely six *accouchements* during the course of the year.' He, however, in the next line goes on to say, that, not satisfied with these data, he made further *personal* investigations ; and (at page 233) he gives a table to show that the *accouchements* which take place in the hospitals are on an average $51\frac{1}{2}$, and a few lines further on he augments it to $63\frac{1}{2}$; at page 241, he adds, 'tout semble donc prouver que les prostituées sont plus aptes à la fécondation qu'on ne l'a cru jusqu'ici.'†

"If I understand Dr. Campbell's third objection, it is, that none junior to himself in the profession ought to dispute his opinions unless they can speak from the experience of half a century. With all deference to the Doctor's years, I must, however, remind him that, in these days of scepticism, even the heads of the profession must condescend, like their juniors, to employ careful inquiry and observation, rather than the mere authority of age, to support their dicta."

I am still (1860) indisposed to believe that abortion at the seventh month, or the premature birth of a putrid child, are any certain signs of syphilitic infection.

I believe that syphilis, like many other diseases, may taint the ovum, and then it will be thrown off like any diseased structure.‡ But my own impression is, that abortion is more frequently occasioned by ulceration of the neck of the uterus (which, again, certain accoucheurs, without the slightest reason, attribute to syphilis—see page 210), than by syphilis itself. But this is not the place to investigate the causes of abortion ; my purpose is merely to state that syphilis is not the most common one, and that, as the attention of accoucheurs is now being called to the subject, I feel convinced that these cases, supposed to be induced by syphilis, will happen less frequently than they did in the practice of Mr. Whitehead, who states, that in 2,000 pregnancies one in seven terminated in abortion.

I believe (and I may now speak from an experience dating back a considerable number of years) that accoucheurs have frequently committed great errors in diagnosing syphilis in the fœtus prematurely born.

As far as my observation goes, I am inclined to believe that in

* I have italicised the word *accouchements* in the text, as well as *quelques*, and conclude that Dr. Campbell is well aware that the French word is not properly rendered into English by *conceived*.

† I would further remark that prostitutes are not treated at Lourcine, the institution in which I made my investigations. Married women and the more respectable classes are the principal inmates. There is another hospital, St. Lazare, for the prostitutes.

‡ If the reader turns to the case of Y. Z., page 551, he will find that in the instance of abortion (where the child doubtless was a syphilitic one, and where the ovum was thrown off by fright), the fœtus's skin did not peel off nor present any marks of disease.

these cases of abortion the peeling of the skin and the decomposition of the body are simply consequences of the laws regulating effete matter, and do not depend upon syphilis.

It seems to me that it would be a very interesting and important inquiry to endeavour to discover what are the external tegumentary manifestations, if any, of a foetus truly diseased by a syphilitic mother. Nothing but an extended and minute record of cases, can enable us to answer this, and such a record I do not think we as yet possess.

The following case serves to show that additional light on these matters would be not only interesting, but also in some instances of the greatest practical value :—

Abortion supposed to depend upon Syphilis.

In November, 1856, a gentleman, in large practice in the neighbourhood of London, brought a patient of his to see me. I examined the case, but could find no present trace of syphilis. The history he gave was, that sixteen months ago, before marriage, he contracted gonorrhœa, but had had no secondary symptoms then or since; some months after marriage his wife complained of soreness, and a few spots were detected in the vagina, which healed under mercury, which was given in the belief that the appearances were venereal, but it was by no means clear that these spots might not have arisen from the mere chafing of repeated sexual intercourse. She suffered at the time from slight discharge, but had never had any other spot or trace of secondary symptoms. She was 'very delicate. This lady was confined subsequently of a dead seven-months' child. The skin peeled off, and the body was offensive.

The husband was said to have had spots on the tongue and on the side, but I detected no trace of anything of the kind. I think some mistake must have occurred, as the papillæ on the side of the tongue, to which my attention was called, were only a little larger than usual. I told the surgeon that it was my opinion that there was not then, and never had been, any syphilis whatever. But he argued that he had been taught that a dead child such as this could only result from syphilis, and had read it in books both ancient and modern. I have reason to believe that he was unshaken in this opinion by all I said.

One reason why I do not think that the fact of a child being born putrid is any safe sign that the abortion arose from syphilis is, that I doubt the possibility of a mother infecting her child with specific disease at every stage of it in herself. The following instance shows the reasonableness of such a doubt. The case is interesting, as the symptoms in the mother had become of the tertiary order. The child of which she was pregnant did not become affected with syphilis, and was born, and remained perfectly free from the complaint as long as it was under my supervision, which was some years.

Feb. 1845.—Tertiary Symptoms with Relapses in the Mother, no Affection in the Child.

I was in attendance upon a respectable woman living in Half-Moon Crescent, Islington, for tertiary symptoms; she had disease of the

bones of the thumb and tertiary ulcers of the pharynx. Some months after I first saw the patient, but during the time she was undergoing treatment, she became pregnant: the child was born with severe ophthalmia, and lost the sight of both eyes; it subsequently had inflammation of the chest. During the period of suckling, the mother took iodide of potassium for a relapse of syphilitic sore throat.

June 1.—The mother, who has been nursing her own child, has had another relapse of sore throat, which is being gradually relieved by iodide of potassium as usual, the child's general health is good, with the exception of a cough.

Oct. 2.—The mother has again returned with affection of the throat. Ordered to take iodide of potassium as before.

March 31, 1846.—This patient is again obliged to have recourse to iodide of potassium. The child has not had any symptoms of constitutional syphilis, and is strong and healthy.

During a late visit to Paris, I was very particular in my inquiries of M. Ricord, as to what influence he supposed that a diseased fœtus would have on the mother while it was in the uterus, and participated in the mother's circulation. To make my meaning more clear, let me state a case. C., the father, labouring under syphilis, marries a healthy woman, D.; before he is quite recovered from secondary symptoms he impregnates his wife, and she gives birth to an infant, who, a few weeks after being born, is covered with secondary symptoms. Will the mother be contaminated through this diseased fœtus? M. Ricord believes that most commonly the mother will escape all chance of contamination, *but* in certain instances which he has observed, he feels no hesitation in stating that the woman who carries an infected fœtus *may* receive from it the germs of the disease; in other words, she may become infected with syphilitic secondary symptoms through the medium of the fœtus, and not directly from the father. In a lecture in the *Lancet*, vol. i., 1848, p. 227, the same opinions are expressed. M. Ricord is reported to have said:—"Supposing a female to be impregnated by an infected agency, how will *she* be affected by carrying a poisoned fœtus? According to certain well-observed facts, we may infer that the mother can receive the germs of the disease from her child, so that, in such a case, she suffers from the syphilitic infection by the instrumentality of the fœtus in utero. It had hitherto been believed that the mother received the infection directly from the father, and that she transmitted to her offspring the diathesis with which she became imbued; but this never happens except the mother has been subjected to the contagion of *primary sores*, and she herself has had an indurated chancre as well as secondary syphilitic symptoms consequent upon such chancre. I am ready to acknowledge that a woman may give birth to an infected child without experiencing any inconvenience herself; the father, in such a case, transmits the poison by reason of the secondary symptoms which are upon him at the time. If he had had *primary* symptoms he would have diseased the mother directly, and the effect might have reached the child through her. A man who has constitutional syphilis upon him, of howsoever long standing it may be, should not

marry, for his progeny runs great risks ; his wife, however, is by no means so much in danger, for the embryo may or may not contaminate her. I well remember a case of this description, where a gentleman with certain secondary manifestations was advised by his medical attendant to postpone engaging in wedlock ; he disregarded the advice, married, and, nine months after, he had the mortification of seeing a well-defined eruption upon his child ; his wife, however, escaped unhurt."

I have met with but few instances in which the mother has been infected in this manner (see page 560), but I think we have sufficient evidence to induce us to believe that the embryo *may* sometimes prove a source or channel of infection. In making this statement, however, I wish it clearly to be understood that the instances of this mode of introduction of the virus into the maternal system are very rare. In nine out of every ten cases met with in practice, I believe the mother, when she is contaminated, becomes so through *primary* symptoms contracted from the husband ; at least, such is the result of my own experience.

It should not be forgotten, however, that although the child is born healthy, and the complaint shows itself upon it only some weeks after birth, still it has been all the time infected, and we can readily understand the possibility of the mother being contaminated through the interchange of fluids going on between the foetal and maternal placenta, which interchange physiologists admit must be very free, however much they may differ as to the exact structure of the organ.

INFLUENCE OF THE FATHER.

Kirkes and Paget, in their "Physiology," say, "Nothing has shown what it is that makes this fluid (semen) capable of impregnating the ovum, or, which is yet more remarkable, of giving to the developing offspring all the characters in features, size, mental disposition, and *liability to disease* which belong to the father. This is a fact wholly inexplicable ; and is perhaps exceeded in strangeness by none but those which show that the seminal fluid may exert such an influence not only on the ovum which it impregnates, but on many which are subsequently impregnated by the seminal fluid of another male. It has often been observed, for example, that a well-bred bitch, if she has been once impregnated by a mongrel dog, will not bear thorough-bred puppies in the next two or three litters after that succeeding the copulation with the mongrel. But the best instance of the kind was in the case of a mare belonging to Lord Morton, who, while he was in India, and wished to obtain a cross-breed between the horse and quagga, caused this mare to be covered by a male quagga. The foal that she next bore had distinct marks of the quagga in the shape of its head, black bars on the legs and shoulders, and other characters. After this time she was thrice covered by horses, and every time the foal she bore had still distinct though decreasing marks of the quagga ; the single impregnation by the seminal fluid of the quagga had impressed its character not only on the ovum then impregnated, but on the three following ova impregnated by horses."—(Page 614.)

In the Museum of the Royal College of Surgeons, the portraits may be seen of these crosses. No. 40 is thus described in the Synopsis:—"The portraits of the Horse, Mare, Quagga, Hybrid and Foal, in the Lower Committee Room opposite the entry to the Small Museum, illustrate the following 'Singular Fact in Natural History,' communicated to the Royal Society by the Earl of Morton, F.R.S., and published in the 'Philosophical Transactions' for 1821, p. 20.

"His lordship, being desirous of domesticating the quagga in this country, endeavoured to procure some individuals of that species, but, being disappointed in obtaining a female, an attempt was made to breed from the male, No. 43, and an Arabian chesnut mare, No. 48; the result was the female hybrid, No. 44, which was five years old when painted, and showed her mixed origin both in form and colour.

"The Arabian mare was subsequently bred from by a black Arabian horse, No. 45, and the produce, namely, a two-year-old filly, No. 46, and a year-old colt, No. 47, though in most respects fine specimens of the Arabian breed, were marked with certain stripes and lines belonging to the quagga, as shown in the paintings; the manes are especially unlike those of the Arabian breed. The third colt, of two months old, is figured in No. 48, and also shows the stripes of the quagga upon the back. 'It is a striking fact,' observes his lordship, 'that so many features not belonging to the dam should in three successive instances be transferred by her to the progeny of a sire who has them not.'

"The following particulars of a fact nearly similar to that related by Lord Morton were communicated to the Royal Society by Dr. Wollaston, and are detailed in the 'Philosophical Transactions' for 1821, p. 23. In the litter of a black and white sow, by a boar of the wild breed, the chesnut colour of the boar strongly prevailed: a second litter from the same mother, by a boar of a very different breed, retained many peculiarities of the wild breed, and even in a third litter the chesnut colour was to a certain extent evident."

It clearly appears, then, that the male parent may have great influence on the progeny, and infect it with peculiarities, if not with disease. Accoucheurs have doubted whether the father could infect the embryo without the mother becoming diseased, and those who admitted the fact, did so generally with great hesitation. In a paper read before the Medical and Chirurgical Society in 1845, I cited three cases, one of which I subjoin:—

Syphilis in Father affecting the Child, the Mother remaining unaffected.

M. H., nine weeks old, was brought to me by its mother on account of an eruption over the whole body; the face presented patches of rosy-coloured papulæ, in some places distinct, in others confluent, or forming irregular circles; here and there over the abdomen the eruption was scaly, but around the eyelids, mouth, and in the folds of the skin of the scrotum and nates, it had assumed the form of condylomata or mucous papulæ; there was considerable irritation of the skin in these situations, apparently dependent on the secretion of

these moist papulæ; the child's voice was hoarse, and there was slight discharge from the nose; the palms of the hands presented well-marked spots of a scaly, copper-coloured eruption; emaciation was less than is usually observed in children labouring under syphilis, but that peculiar earthy hue of the skin generally was very apparent.

HISTORY.—The mother states, she married four years ago, and became soon after pregnant, went to the full time without any untoward event, and produced a dead child, which she describes as dark coloured, and remarked that the skin peeled off on the slightest touch; during the following year she miscarried between the third and fourth month. On the occurrence of the third pregnancy, no threatening of miscarriage was felt, and the child, my present patient, was born at the full period perfectly healthy. During the third week the mother observed spots on the genital organs of the child, and they have been gradually increasing up to the present time, a period of six weeks. I cannot discover the slightest symptom of primary or secondary disease on the mother, who says she has never had a spot on her own body, and I see no reason to disbelieve her statement. The father states, that about four years ago he contracted chancres, was salivated, and secondary symptoms followed; he again took mercury, and, believing himself cured, married, and denies having had any primary symptoms since; but states he has occasionally seen on his mouth and tongue white patches, which have disappeared on the application of burnt alum; has not remarked any spots on his body; there is nothing at present in his appearance to bespeak syphilis, nor can I discover any recent marks of infection.

TREATMENT.—The mother was desired to put the child into a bran bath, to apply an ointment to the affected skin, composed of one drachm of unguent. hydrarg. nitrat. to three drachms of spermaceti, and to give the child a powder containing two grains of hydrag. c. creta every night. This treatment in a few days produced considerable amelioration, and within a month the child was perfectly free from disease, it had regained its healthy appearance, and did well.

I now add another case, bearing most unequivocal evidence of the male parent communicating the disease, and could cite numerous others were corroborative evidence wanting.

*Psoriasis Palmaris in the Father, Hereditary Syphilis in Child,
Mother remaining free from Disease.*

Jan. 13, 1847.—Y. Z., a remarkably good-looking man, called on me to ask my opinion on his case, which he thus detailed. He is a surgeon living in a healthy neighbourhood. He showed me his hands and feet, on which I observed large patches of psoriasis in size equal to half an orange. The ham or copper colour was very distinct on the scalp, where there is an abundant impetiginous eruption, and the scrotum is covered with psoriasis, which renders walking difficult.

HISTORY.—Five years ago—that is, in 1842—he contracted indurated chancre, and took a few blue pills. The induration did not disappear, but the sore broke out again. He took a few more pills irregularly, but the induration lasted a twelvemonth. Some months after the appearance of the first sore, secondary symptoms appeared, for which

he took sarsaparilla and iodide of potassium with benefit, but suffered from relapses. Three years ago, after having been free from disease for four months, he married, with the sanction of one of the most eminent London surgeons. His wife miscarried at the seventh month, not from syphilis, but from being frightened by a drove of oxen. After his marriage secondary symptoms broke out on his body. His wife has never been affected. Mrs. Y. Z. became again pregnant, and was confined of a healthy child, but pale. Some two months after its birth, its mouth and bowels became affected; the nipples of the mother remained healthy. Condylomata appeared at the anus of child, which were treated and cured with blue-stone. At thirteen months old it had, according to the statement of its father, stains of an unequivocal kind on its forehead. The mother being again pregnant, the father desired to know what would be the probable condition of the child. I did not hesitate to state that this eruption in the father was syphilitic, and declined to undertake the treatment except my patient would lay up and employ mercury. This he was unable or unwilling to do on account of his professional duties.

I called at this gentleman's house on Jan. 21, 1849. He said he was unable to follow my advice, and had not taken one grain of physic since last consulting me. I noticed small irregular spots of scaly psoriasis palmaris, which have lost their coppery hue; on the upper part of the left temple there were spots or stains, faint but unmistakeably syphilitic; the affection of the scrotum had disappeared. He told me he had lost his first child with hydrocephalus. The one with which his wife was pregnant when he previously consulted me was brought down, that I might judge of its condition, and a healthier child I never saw, and it never had had a day's illness. His wife had remained perfectly well, and is again pregnant. As far as his own general health goes, it is excellent; has had scarlet fever during the last year, but did not observe his syphilitic complaint aggravated by it, although press of business and worry he thought augmented it. He expressed himself confident that his disease was syphilitic, and was very slowly wearing itself out, and hoped that it would not again appear in his offspring.

We must then, I think, lay it down as a rule, that a father labouring under secondary symptoms, *may* contaminate the ova which he impregnates, although his wife remains perfectly healthy; and it is an error to suppose that a husband labouring under secondary symptoms will first infect his wife and through her the embryo. Contamination must take place at the time of impregnation, showing that the semen, in common with the mucous and dermal structure, is in a diseased state, but not in so diseased a condition as to be able to contaminate the mother. Such cases as these bear out my own experience, as well as fully corroborate that of M. Ricord, that secondary symptoms are not inoculable, nor transmissible except hereditarily; experiment and observation corroborate this opinion; as shown by reference to p. 405, where the subject is fully discussed.

I think it may be distinctly laid down that the father cannot infect or influence the fœtus through the membranes; he may, as we have seen above, infect the embryo at the moment of impregnation, but not

subsequently, except through the mother. I shall suppose the following case. E., a healthy father, impregnates F., an equally healthy mother; if E. subsequently is affected with indurated chancre, or secondary symptoms, the child will be born healthy, unless E. has communicated the chancre to the mother, then the case comes under the category of those to be alluded to directly.

These cases of transmission of disease from parent to offspring are very complicated, and perplex us greatly, in consequence of our being often unable to discover why in one case the child is infected, in another it should escape; for it by no means necessarily follows that the infant, the produce of a diseased male, should show marks of syphilis. The following case is highly interesting in many particulars, and the more especially as it occurred in a medical man upon whose veracity I could fully rely.

Secondary Symptoms in the Father, Wife and Children remaining unaffected.

In the year 1851 a young surgeon called on me labouring under undoubted secondary symptoms of the throat and palms of the hands. His statement was, that two months after marriage he contracted chancre on the finger by professionally attending a female labouring under primary disease. Mercury was not taken, and secondary symptoms followed. At the time he contracted this sore on his finger, his young wife was two months pregnant; she went her full time, escaped all infection, although he never desisted from sexual intercourse, and the child was born quite healthy. Mercury was given to the father, who recovered, and I lost sight of him until April, 1853, when he again called on me, and showed me his hands covered with large patches of psoriasis palmaris, which he has been more or less subject to ever since 1851, although mercury does him good for the time. He tells me that his first child still remains quite well, and that his second, now two months old, is likewise in perfect health. The mother has never ailed, but the father has still undoubted marks of syphilis, and he expresses much surprise that this second child is not marked.* (See Prognosis, p. 569.)

November, 1856, I asked this gentleman to call upon me; he showed me on one hand traces of psoriasis palmaris, no other symptoms to be noticed as they are on other parts of the body; he tells me he took mercurial pills for the hand some months ago, and the symptoms disappeared; but so great a state of depression came on that he left off the mercury, and the eruption on the hands returned. His three children are all well, and so is their mother.

This is a case of both mother and child resisting disease in a manner that is extraordinary, and deserves the particular notice of those treating of hereditary disease. It may be that the mother and child

* This occasional immunity is in accordance with what we see in the transmission of races, breeds, and types. The law is, *that what is organically acquired becomes organically transmitted*. The exceptions to this law depend, it is supposed, on the potency of race or individual superiority in age, vigour, &c. (See *Westminster Review*, July, 1856, page 156.) There is in these cases a new combina-

had become gradually acclimatized, or that they possessed an innate power to resist evil influences. Should any cause, however, deteriorate the system, the disease may, in such cases, appear at any time. The same result follows in the male adult who is subject to the syphilitic diathesis; any depressing influence may at once produce the external symptoms of the disease. (See the case mentioned at p. 403.)

The case of Y. Z., cited at p. 551, however, proves that the male may have about him marks (though slight) of secondary symptoms during so long a period as four years, and yet may, even after that time, impregnate and infect the ovum, and the ovum subsequently infect the mother. From the cases cited by authors, it seems to be supposed that a father may beget infected children after an almost indefinite length of time (see Dr. Campbell's case, cited at p. 545). I have never yet met with such instances, nor does M. Ricord allude to them; but I can readily believe (in fact, it is in accordance with the observations made at page 551), that as long as a man has relapses of secondary symptoms, however slight, he *may* beget infected children, but I am confident that this will not necessarily follow merely because the father has once been diseased, unless he is suffering or has *lately* suffered under secondary or primary disease.* This has been the case in all the instances of infantile syphilis I have witnessed.

I would here remark that these questions are not mere speculations. Their solution and investigation are of the highest practical importance, and deserve the gravest consideration of my readers. Patients recovering from syphilis are constantly asking their surgeon, may I marry? or, when may I marry? The case of Y. Z. is a striking instance of the sad results of marrying too soon after the disappearance of secondary symptoms; and if any one will take the trouble of turning to the prognosis of secondary symptoms, page 411 (where the subject of relapses is discussed), he will find authorities quoted for the belief, that in spite of all treatment, mercurial or non-mercurial, an absolute guarantee cannot be given that secondary symptoms will not return.

It requires that the surgeon should possess not only courage, but tact, to meet all the various cases which may arise. It is by no means an unimportant or an easy matter to stop a marriage, especially in high life. Sometimes, moreover, special circumstances oblige him suddenly to change his former opinion. I met with a painful case of this kind in my own practice, when, after having refused my sanction to a marriage on the ground of the gentleman's suffering at the time from

tion of old elements—the results may depend upon one or the other parent, who may be vigorous enough to resist the morbid influence. But we are still much in the dark on these matters.

* From the following case it would appear as if some surgeons prohibit the patients marrying for a long time, even if the single man has only suffered from simple chancre.

In October, 1856, a gentleman came to London to ask my opinion about his marriage; he told me that six months ago he contracted slight chancres, for which he was treated with pills, by a surgeon of eminence in a large provincial town. He had been taking medicine ever since, and getting tired, wanted to know if he might now discontinue it. On inquiry I found he never had had induration, and I advised him to leave off medicine, and gave my sanction to his marriage. I do not think that such prolonged treatment after simple chancre is founded on true scientific principles.

secondary symptoms, he stated, as an argument to overcome my scruples, that he had already had connexion with his intended wife, and wished to repair the wrong he had done her. I gave my consent and in this case, fortunately, no evil results followed.

When a patient comes to me who has been labouring under chancre, and says he is about to marry, I feel no scruple in telling him what the probabilities of the case are. If no mercury has been used for the cure of primary symptoms, and three or four months have intervened without the occurrence of secondary symptoms, I sanction his nuptials; but if mercury has been given for an indurated chancre, I require at least six months' quarantine. If the health after this period remains good, and circumstances render marriage, in the opinion of the patient, absolutely necessary, I no longer put my veto upon it; but should relapses, however slight, have occurred, I withhold my sanction, for daily observation of the deplorable consequences of following a different course obliges me to advise a patient not to marry.

A medical man cannot be too careful or minute in his examination of these cases. Negligence, the desire of contracting an advantageous marriage, and various other causes, will induce a patient to conceal the history, and the blame of an unfortunate result will be thrown on the surgeon, who omitted to warn him of the consequences.

INFLUENCE OF BOTH FATHER AND MOTHER.

When a surgeon is called upon to give an opinion on the case of a child that soon after birth shows unequivocal marks of syphilis, at the same time that constitutional disease is present in both parents, there is not much difficulty in his way; but if the father does not think it proper to acknowledge the share he has had in the infection, or if he denies having suffered from syphilis at all, or cannot be found, the surgeon may be left in great doubt on the cause of the infection, as the following case will show:—

Infection of the Infant, denial of the Father and Mother that the disease could be Syphilis.—Tardy avowal of the correctness of the Diagnosis.

June 27, 1845.—A married Irishwoman, twenty-seven years of age, came to consult me about her breasts, which were very sore, as well as about her child. The nipple appeared retracted; breasts flaccid and small. Around the nipple are large ulcerated patches of condylomata, not much raised, although as large as a five-shilling piece. On the body, particularly on the sternum and shoulders, are some scaly patches of a coppery hue. On the arms there is slight roseola, presenting the same tint, with impetigo on the scalp: the mouth and throat free from disease. At the time of consulting me, duck-weed was the only remedy she had applied to the breasts.

HISTORY.—States that the nipple became sore a month ago, arising, as she believed, from the child sucking. Denies having had any discharge or sores. The eruption on the body only appeared, she

states, a few days ago. Her husband was laid up for a week, some time since, with a pain in the lower part of the abdomen, but had no medical advice as far as she knows.

The CHILD healthy; no spots on the body, but at the anus I noticed several condylomata.

HISTORY.—The child is one year and a half old. States that some buttons of small-pox have, on a previous occasion, appeared on the body; for which the child was under treatment by a medical man, and the spots now seen are the remains of them.

July 9.—The mother's breasts are now nearly well, but on the back of the neck unequivocal marks of secondary symptoms are to be met with. After some hesitation she alluded to a soreness at the vulva, and an abundant crop of small and red condylomata, accompanied with discharge, appeared on examination. She assures me these are of recent date. The husband denies having had syphilis, and so does the wife.

Aug. 1.—The wife now states that the husband has confessed to having had chancres, and the mystery is cleared up.

The following case is not unfrequently met with in practice:—A dissipated husband communicates syphilis to his wife and child; says nothing to her, but goes under the treatment of a stranger and is cured. When the family surgeon sees the infected mother and child, he can obtain no history of the father's ailments, who positively denies having had the disease, except many years ago before his marriage. Some are induced to believe him, and thus obscurity is thrown around a case otherwise simple.

In some or other of these various ways, syphilis in married life is surrounded with a thousand sources of error, and the surgeon will find great difficulty in arriving at sound conclusions. But he should always, if possible, convince himself where the malady commenced; it is often absolutely necessary in the treatment, and will frequently prevent an innocent nurse or foster-child from being unjustly accused of communicating disease.

INFLUENCE OF THE NURSE.

Can the Child be infected through the Nurse?—The milk of the nurse has been supposed to play an important part in contaminating the child. If, however, we carefully investigate cases as they occur actually in practice, and analyse the symptoms, we find no proof of this generally admitted fact. On the contrary, the evidence tends to show that a woman actually labouring under syphilis may suckle an infant without communicating the disease to her foster-child.*

Instances of women who have contracted syphilis from their husbands during their pregnancy, and have given birth to children that afterwards become syphilitic, are no proof that the disease has been

* John Pearson says, "We have not seen one clear and decisive case of the disease being given by an infected nipple."—"Manuscript Lectures," p. 95)

"Infected nurses have suckled the children without communicating the disease."
—(*Loc. cit.*), p. 97.

communicated through the milk of the mother, and not through the hereditary taint. This loose kind of evidence on a highly interesting physiological fact gives rise to the most deplorable consequences, both to the peace of families and the treatment of the patients. Instead, then, of citing cases which admit of this double interpretation, either that the disease has been contracted by hereditary taint or by the milk, the only ones which really bear upon the question are those where the mother has been infected with primary and secondary symptoms after the birth of the child, but during the period of suckling. Do we find her communicating to the child the disease she herself is actually suffering under? I answer, positively not, and refer to the following case as a type of others.

Case showing that a Mother labouring under Syphilis may suckle her Child without inducing the Disease in the Infant.

June 20, 1846.—Mr. Lane, knowing the interest I took in syphilitic diseases of infants, desired a female then under his care to call on me. M. M. stated that she was married in February, 1843, confined of first child January 6th, 1844; in May, 1844, an eruption like scarlet fever appeared over her body, and she had rheumatism, and has been under treatment, on and off, ever since. This patient brought her child with her, and it is very healthy, although she has suckled it herself; it has never had a spot on its body.

The mother presents the following symptoms:—The back, neck, and body sprinkled over with spots of well-marked lepra and papulæ of a decidedly syphilitic character. Slight iritis has come on within a few days. The gums are spongy and saliva copious, but there is no fœtor of the breath. Has not taken mercury for some months. The tongue is covered with small, flat, painful ulcerations, where the teeth come in contact with it. This state of things has existed some time, in spite of iodide of potassium and acids. (I have seen several similar cases.) Mr. Lane gave calomel and opium, in consequence of the iritis. The peculiarity of the case is, that the child has never had secondary symptoms, showing that the child nursed by an infected woman does not necessarily contract the disease.

Jan. 25, 1847.—This patient has been taking the iodide ever since, and the eruption became nearly well, but has now broken out again, and a few spots on the head and mouth are visible; gums swollen and red. Child perfectly well.

March 7, 1847.—The mother returned to-day. States that she took iodide of potassium for some months, until quite well, as she thought; about May she last took medicine, no pills; has been in good health ever since. On 2nd of August, confined of a healthy female child, who remained well until about Christmas, 1846, when she observed redness about its anus and calves of the legs; used salve and castor oil; got well immediately, and remained well until the commencement of February, when spots appeared on its eyebrows, chin, and mouth, but now says there was redness about mouth for two months. She acknowledges that the child had the snuffles two months after its birth, which have continued ever since.

PRESENT APPEARANCE.—The second child, now seven months old, is a fine, healthy, plump infant. No spots on body, limbs, anus, or head; eruption confined to face, where we observe raised tubercular patches on nose, mouth, and chin of a pinkish hue, but very characteristic of syphilis; is troubled with the snuffles, and slight blisters on the tongue.

CONDITION OF MOTHER.—No soreness of nipple nor spots on body. On the edge of tongue there are faint white spots; gums blue, and edges covered with tartar: general health good. Has not taken any medicine, except an opening draught, since May.

STATE OF HUSBAND.—*March 10.*—Quite well at present. On the right hand two patches of eczema impetiginoides. Gives a long rambling account of having had syphilis before marriage, but denies having been a sufferer from chancre since.

The wife since discovered that her husband's account was false; and he admitted that he contracted disease during the time she was confined of her first child.

Cases like the above are very instructive; they give very good specimens of the difficulties which a medical man has to contend with in obtaining a history which runs over so many years, and when there is a disposition to conceal the truth. They explain how it is that a first child may be born healthy, and why, in subsequent pregnancies, the infants may all be infected.

I may further cite the case of M. H., page 561, to show that a nurse actually labouring under syphilis may suckle a foster-child for a fortnight without ill consequences. I would likewise call attention to the case of the patient, related at page 548, where a mother labouring under tertiary symptoms suckled her child with impunity.

Dr. Hennen, in his *Military Surgery*, says, p. 558, "I know it to be a positive fact, that a nurse with secondary symptoms may suckle children with perfect impunity to them."

Now, although I allow that secondary symptoms are not communicable, I by no means recommend that a wet-nurse should be selected who is labouring under the disease; all I wish to maintain is, that syphilis cannot be thus communicated to the child; common sense must tell us that the milk of such women cannot be advantageous to the infant.

M. Ricord, whose experience is not equalled by any surgeon in Europe, has never seen an instance of the nurse's milk infecting the child. Nor have I; for in the many cases in which I have been consulted where this supposed cause has existed, I have always been able to point out the guilty party, who was *not* the nurse. In opposition to the cases I here cite, I am well aware that many instances may be collected from journals, clearly (in the opinion of their authors) showing that the milk of the nurse can contaminate the child; but in the absence of full details, and considering the chances of deception, I still believe that the milk of the mother or nurse cannot infect the child.

INFLUENCE OF INFECTED FŒTUS ON ITS MOTHER.

We have, I think, arrived at one or two tolerably certain conclusions on this difficult subject. It is clear that the father may infect the child independently of the mother. It is equally clear that a mother who contracts indurated chancre, or becomes affected during her pregnancy with secondary symptoms (even though the father be perfectly healthy), may give birth to a child that will, soon after birth, present unequivocal symptoms of syphilis. If both parents have been recently infected, the child must almost necessarily become diseased. Lastly, there is (in my opinion) no possibility of a child becoming infected through its nurse.

Before proceeding further, I must say a few words on the influence which a fœtus, begotten by a syphilitic father, may exert on the mother who up to this period has been perfectly healthy. My own experience is, that a mother may carry to the full period a child which will subsequently show marks of syphilitic infection, without herself suffering from syphilis. Experience further shows me that she may suckle such a child for the usual period, and yet remain free from the disease; the child meanwhile suffering severely from the affection, which it inherits from the male parent. Of this fact no doubt remains, for even the late Mr. Colles (whose opinions on these matters I have been unable to quote hitherto, as they differ almost entirely from my own) is obliged to admit the fact, that the mother is not necessarily affected when suckling her own offspring, which is affected with syphilis. He says, page 304, "One fact well deserving our attention is this, that a child born of a mother who is without any obvious venereal symptoms, and which, without being exposed to any infection subsequent to its birth, shows this disease when a few weeks old, *this child will infect the most healthy nurse, whether she suckle it or merely handle and dress it*; and yet this child is never known to infect its own mother, even though she suckle it while it has venereal ulcers of the lips and tongue." I have placed a portion of the extract in italics, for, as I have previously stated, my experience is opposed to the fact, that a nurse will become infected; and supposing it a well-authenticated and observed case, I am at a loss to understand why a mother may suckle a syphilitic child with impunity while a nurse cannot; I think it would be difficult for any one else to explain such a phenomenon, if it existed; for surely, if the child's mouth or secretions can infect the nurse, the same effect would be produced on the mother. In the absence of corroboration by others, and in the face of what I have witnessed, I must doubt the correctness of observations which tend to show that a syphilitic foster-child can infect either mother or nurse.

M. Ricord admits with me, that a mother may give birth to a syphilitic child without herself becoming subject to the disease; but his experience goes to prove that where a woman is pregnant of a child whose blood is contaminated with syphilis hereditarily acquired from the father, the mother's system may become contaminated. The intimate relation of the fœtal and maternal circulation can be readily imagined to allow of the passage to and fro, by endosmose and

exosome, of certain principles which, though insensible to our reagents or senses, must nevertheless be present in the circulation. But although I admit the possibility of this source of infection, in consequence of M. Ricord having observed it, I would caution practitioners against attributing the disease in the mother to this source alone, particularly when we know for a fact (which M. Ricord himself most readily admits) that infection is not necessary, and that during intra-uterine life the poisonous quality of the virus is in a dormant state, seldom operating at the time of birth, but only some weeks after, when the infant is exposed to changes of the atmosphere. I have met with a very few such cases ; the following is probably one.

Case of infected Fœtus contaminating the Mother, probably through the Placental Circulation.

July, 1850.—A gentleman, twenty-eight years of age, came to me to-day complaining of a sore tongue. On the left side of the organ a white spot as large as a threepenny-piece, looking like a cicatrized ulcer, has appeared. On the lip there is a similar spot, but the surface is quite level.

His HISTORY is the following :—Two years and a half ago he contracted syphilis, and secondary symptoms followed. During the time he laboured under the complaint, his wife became pregnant, went her full time, and the child was born healthy ; a few weeks after birth it showed symptoms of secondary syphilis, spots at the corners of the mouth, and on the palms of the hands ; the mother, who had been perfectly healthy up to this time, then (some months after her confinement) had unequivocal marks of secondary symptoms, no sore breasts, but psoriasis palmaris.

Here, then, is an instance of a father infecting the child, and the child contaminating the mother, the contamination showing itself in the mother twelve months after the embryo had been infected. This case is the more important, as the father had read all that had been written on syphilis of late years, and was an excellent observer.*

INFLUENCE OF INFECTED INFANT ON THE WET-NURSE.

Admitting, then, as I do, that a child in utero may infect its mother, I disbelieve *in toto* in the possibility of a syphilitic child (that is to say, one labouring under secondary symptoms) infecting a

* Some few years ago, I attended a meeting of the Hunterian Society, when the subject of infantile syphilis was discussed, and heard it stated by a distinguished accoucheur, that the semen of an infected male could contaminate the mother directly, without impregnation taking place. This is quite different from all I have ever witnessed. I am at the present time acquainted with several cases of women cohabiting with men labouring under secondary symptoms without themselves becoming affected. I have watched similar cases during the last twenty years, and believe it to be a fact, that diseased semen (on the supposition that it is diseased because the male is suffering from secondary disease,) will have no effect on the vagina. In cases where impregnation does not occur, I believe the semen is expelled as effete matter, influencing the female in no way either for good or evil. The instances on which the opposite opinion is founded may be accounted for in so many ways, as has been abundantly pointed out in the course of this work, that I cannot but think that the statement above mentioned was made under a misapprehension of the laws of syphilitic infection.

wet-nurse. I have been frequently consulted about cases which, in the opinion of some, render this mode of infection certain. I subjoin an instance.

Case of a Nurse stated to have become affected with Syphilis from Suckling a Child supposed to labour under Secondary Symptoms.

On the 14th of July, 1846, Mr. Gay asked me to see M. H., a respectable-looking female, about twenty-five years of age, unmarried. On the face there are stains of a coppery hue; on the throat there is redness in patches, hardly amounting to superficial ulceration; on the body, spots may be seen in a more advanced stage, slightly scaly. Mr. Gay says, about the vagina they amount to aphthæ, but not condylomata; on the palms of the hands the blotches are very red and scaling. On the right breast, close to the nipple, is a red cicatrix, as large as a pen, which is slightly indurated; the other nipple is healthy. There is fever, great pain in the joints, particularly the right knee.

HISTORY.—Three months ago was confined; enjoyed good health, so does the father of her child. Five weeks after confinement, was recommended by Mr. Rawlins as wet-nurse to Mrs. L., and she placed her own child with a friend, and took the situation. When she first took charge of the foster child, she observed it to be in a dreadful state; it was affected, according to her statement, with eruptions about the genitals and anus; had what was called the thrush in its mouth, and the snuffles in its nose. She suckled Mrs. L.'s child four weeks, when she was dismissed because the child became so bad that Mr. Rawlins recommended change of milk. A few days after leaving Mrs. L.'s—that is, nine weeks after confinement, and about three weeks since—observed the sore (the cicatrix of which is still evident) on the right breast, which was burnt with caustic by a medical practitioner, and a gland in the arm-pit became inflamed. After leaving Mrs. L.'s situation, she nursed the child of a Mrs. S. for a fortnight, and left, for fear of injuring the child. A fortnight ago, the eruption she is now suffering from broke out all over the body. Has thus nursed her own child only four days since the appearance of the disease. It is a pretty little infant, at present quite healthy, and three months old.

As there existed no doubt of the syphilitic character of the eruption on M. H., and as the case presented several points of interest, Mr. Gay determined to try the palliative treatment, and saline medicines were ordered, with five grains of Dover's powder, to be taken at bed-time. I undertook to investigate the case, as it might be supposed from M. H.'s statement, that we had to treat an instance of a nurse diseased by a syphilitic child. Had not all my former experience contradicted such a supposition, I might have been contented with the history. As the parties were so respectable, I determined to write to Mr. Rawlins, with whom I was previously acquainted, and test the accuracy of the nurse, M. H.'s statement. Mr. Rawlins at once agreed with me in the importance of thoroughly sifting these cases, and appointed a day for me to see the child who was said to have communicated the disease. A more healthy boy it would be impossible to find. The parents had been apprised by Mr.

Rawlins of the nature of the nurse's statement, and were anxious to prove themselves innocent of any imputation which could be brought against them. Mr. Rawlins tells me he selected M. H. as nurse; she at that time presented all the marks of health, with a good breast of milk. Mrs. L.'s child was suffering under thrush, and some erythema of the genital organs, not uncommon among infants whose bowels are disordered; but had never had any trace of syphilis, nor had the parents, who are very respectable persons. He has never given the child mercury, and dismissed M. H. because the child did not thrive, and because he suspected some latent disease. The nurse Mrs. L.'s child now has is quite well, and has remained so since M. H. left her situation. Mrs. L. states that she observed spots about the angles of the nose and mouth of the nurse M. H. before she quitted her service. Mr. Rawlins was anxious to see the present condition of the nurse M. H., and on doing so had no hesitation in declaring her complaint syphilitic, and speaks of her altered appearance in the few weeks since he had seen her.

Wishing to see Mrs. S., in whose service M. H. had subsequently been, I called, and found Mrs. S. regretting M. H.'s leaving her service; she did not say her child was ill, and I did not wish to alarm Mrs. S.; so I conclude that her child has not suffered from taking M. H.'s milk during the fortnight. *July 17th.*—M. H. has lost that muddy-looking complexion, and stains on face are disappearing; says pains in limbs and knees are much better; M. H.'s child's bowels are very relaxed, but motions healthy. Ordered to continue the treatment, and some powders were given to child. *21st.*—Much the same. Complaints of pain in hands where the epidermis has peeled off; no induration remains around the breast. The child has become altered in appearance; its face is pale, and its motions are green and loose. Recommended mother to wean the infant and continue the same treatment; the child was ordered powdered chalk and opium, three grains, three times a day.

At the present moment, when differences of opinion exist on the possibility of children infecting nurses, and *vice versa*, a few observations may not be inopportune, particularly as it seems to be a very prevalent opinion that infection can occur in this way. As far as the result can be tested by inoculation, secondary symptoms are not inoculable; within the last few days I have again tested this in the presence of several gentlemen. A man was suffering under tubercular syphilitic affection of the arm; the tubercles ulcerated. With a lancet we scraped off the epidermis on a healthy portion of the arm, and applied a piece of lint, soaked in the secretion, to the abraded surface, and kept it there for twenty-four hours. Slight irritation, followed by ulceration, came on. This ulcer healed immediately the irritating secretion was removed, proving that the sore depended upon the simple irritation of the secretion, and upon nothing specific, just as an issue is kept up by means of peas, or any other foreign substance. Doubtless I shall be told, that although inoculation may not succeed, practitioners observe cases where infection could not have occurred in any other way. It is impossible

for me to reply to such cases, otherwise than to point out the numerous sources of error, which *may* not only depend upon the surgeon, but upon the patient or friends. I have (see p. 257 of this treatise) related an *aggravated case of eczema rubrum on the genital organs, mistaken for syphilis*. Within the last six weeks I have witnessed a similar case. The following instance proves how easily a practitioner might be induced to believe in the existence of this form of infection, of which, without denying the possibility of its occurrence, I have never yet been able to meet with an instance that I could attribute to contagion of secondary symptoms. A medical practitioner wished me to see a female, recently married, labouring under condylomata. To prevent family disputes, I desired the husband to call upon me. On examining him, there was no trace of syphilis, primary or secondary; and he then broadly hinted, that since his marriage he had heard of his wife's immorality previous to his acquaintance with her; this she subsequently acknowledged. Now, had she been able to infect her husband, most practitioners would have disbelieved the husband's statement, and pitied the unfortunate wife. This case proves what experiments induce us to believe—viz., that condylomata and secondary symptoms are not contagious; and I must repeat, that hitherto every instance I have seen corroborates the results of inoculation.

I would also refer my readers to the first case related at p. 406, as one *showing the impossibility of infecting the system through secondary symptoms*.

Irish surgeons do not coincide in these opinions. The statements they make are very startling, and it would appear as if it were a common occurrence in Ireland for syphilis to be conveyed from the child to the nurse. In a late trial which took place at Cork (see *Medical Press*, vol. xv. p. 252), Dr. Bull mentions having seen this occur in more than a hundred instances. The late Mr. Colles also believed in this source of infection, and such combined experience deserves the greatest consideration; still, among the numerous instances which have fallen under my notice, I have in vain looked for such cases. Believing that these gentlemen cannot have been deceived in the *facts* they observed, I live in the hope that through some such source as this we may one day arrive at a knowledge of the origin of syphilis. Far from treating such cases as fables, I would encourage every species of investigation into this obscure subject, especially as to whether the disease communicated was syphilis or some other complaint. I have already, on various occasions in the course of this volume, alluded to the question. I am inclined to think that a variety of animal poisons, resembling in many respects, but still widely differing from the virus of syphilis, may be introduced into the human system, and give rise, particularly if treated with mercury, to all sorts of apparently anomalous secondary effects. Thus I have seen, in particular constitutions, phagedena attack a simple sore and commit dreadful ravages, giving rise, even when not treated with mercury, to peculiar eruptions, which show that the system is poisoned. I have seen in such cases mercury (which has been thought to be an antidote) produce the most serious consequences, in fact, re-poisoning a system which was

saturated already. I have also seen bad meat produce constitutional symptoms, which it has been very difficult to distinguish from those of syphilis. (See p. 281.) I have observed an animal poison in a blacksmith's wife, which put on many of the characteristics of syphilis, and which, though it could not be traced directly to farcy, must have had its origin in some such source. (See p. 279.) Look at the effect of dissecting wounds on the system, of chancre, of cancrum oris, of the secondary effects of typhus fever, scarlet fever, &c. Now if we poison the system further, under the idea that it is some dregs of syphilis that we are treating, no surgeon can be certain what disease he has under his care, particularly when his patients are ill-fed, half-clothed, and sleeping in the worst-ventilated, worst-sewered quarters of the town. Certainly he will hesitate before he calls everything syphilis, or believes in the secondary forms being contagious, or, from such cases, contends that they are capable of being transmitted from the infant to the nurse. (See further on this subject, *post* p. 577—586.)

DIRECT PRIMARY INFECTION OF INFANTS AND CHILDREN.

It is *possible* that the child may be infected by sores (primary ones) when passing through the vagina of its mother, supposing her to be suffering from them. This form of infection is, however, so rare, that I have never witnessed it. The child is usually shielded with a covering of secretion or mucus, which, generally speaking, protects the surface, and, as abrasions of its skin rarely take place during delivery, I see no probability of the chancrous matter inoculating the child, particularly if it be washed, and the ordinary modes of cleansing it be employed. But although it rarely becomes infected at birth, I believe children may contract primary syphilis from sleeping with infected persons, or from using cloths with which others have wiped their sores. The following is a good illustration:—

Indurated Chancre in a Child, followed by Condylomata, contracted by sleeping with a Brother.

May 26, 1847.—Mr. Avery desired this patient's mother to call on me, as there were some obscure points about the case. C. G., a little boy, seven years of age, applied to the Charing Cross Hospital, with condylomata, which were supposed to be hereditary. A close investigation of the case rendered the diagnosis very simple. A large condylomatous growth existed on both sides of the anus, a patch of similar kind on the tongue, with enlarged tonsils, and hair falling off; the child was pale, but in other respects pretty healthy. Not satisfied with these appearances, I made him strip, and examined him carefully; on the prepuce, I found an indurated chancre, the mother not having mentioned anything about it.

HISTORY.—Five months ago the child complained of pain in going to stool, and the parish surgeon gave him some treacle and sulphur; the mother, finding the child getting worse, applied elsewhere, and was told the child had piles; she then applied to the Charing Cross Hospital. On being closely questioned, the mother states she observed something the matter with the child's penis two months

since, but, not thinking it of any importance, never mentioned it to any of the gentlemen she consulted ; thinks it may have been there a long time. On inquiry, this child slept with an elder brother, who had been a patient at the Charing Cross Hospital in the months of August and September for some form of venereal disease.

The case at once became clear : instead of this being an hereditary complaint coming on in a child seven years of age, it was simply an instance of secondary symptoms with the primary ones still existing ; but, supposing the chancre had not existed, it might have been cited as a proof that hereditary syphilis may break out seven years after birth.

August 3.—Mr. Avery again sent this child to see me ; had been taking rhubarb and magnesia occasionally, and using zinc wash. The condylomata at the anus were well, but they still cover the tonsils, the glands on the outside of neck much, enlarged, induration on penis gone, general health pretty good, but aspect pale.

Jan., 1848.—There remains one white patch on the tonsil, no other secondary symptom, child pale.

INFLUENCE OF VACCINATION IN TRANSMITTING SYPHILIS.

It has been suggested that vaccination may introduce the syphilitic poison into the system, and explain some of the anomalous cases met with in practice. This is not my opinion. The following is an abstract of the answer I gave to the questions submitted to me on the subject, and which will be found reported at length among the papers printed by the Board of Health, and entitled, "Papers relating to the History and Practice of Vaccination, presented to both Houses, 1857."

In answer to your third question, "Has lymph from a true Jennerian vesicle ever been a vehicle of syphilitic infection to the vaccinated person?" I can only say, that I have never witnessed a single case which would bear out the supposition. I have, however, been consulted on several of these supposed cases, showing that there are members of the profession who still entertain the opinion that such a mode of infection is possible ; but in all these doubtful cases I have been able to detect one or more of the sources of error, which I will shortly enumerate, as well as the reasons, founded on numerous experiments, which induce me to believe that a syphilitic taint cannot enter the system in this way. I have been more particular in investigating such cases from the conviction that syphilis is the only disease which can furnish us with positive proof of the existence or non-existence of hereditary infection, inasmuch as it (syphilis) cannot be conveyed into the system either by the air we breathe, the food we swallow, or arise from the situation we live in ; circumstances which may become sources of other hereditary taints.

In the first place, I may be and have been told, that it was only after vaccination that the syphilitic taint appeared, the infant and the parents having been previously free from all traces of disease. In the opinion of some, this is conclusive evidence of the mode of entry of the poison into the child's system. In several such instances that I have witnessed, I have never been satisfied that the child from whom the virus was taken was a syphilitic infant ;

and to assume this important point, as is often done, clearly invalidates the whole argument. Another source of error is that hereditary syphilis in infants does not usually appear at birth, but about the time that the child is vaccinated, that is, from a month to six weeks after birth, and this is the reason why the syphilitic infection apparently follows vaccination. All that is proved in such a case is, that vaccination does not prevent the development of syphilitic symptoms.

Again, if an infant is born with the syphilitic diathesis, the disease need not necessarily show any external marks of its being in the system until some exposure or depressing cause comes into operation. Such may be vaccination : for no one will deny that the maturation of the vesicle is often attended with derangement of the child's health. In such cases vaccination is certainly the cause of the disease, but not the vehicle by which it was introduced into the system.

Again, the diagnosis itself is frequently erroneous. I have given instances in the last edition of my work on "Disease of the Urinary and Generative Organs," and have seen others since, in which children are said to have been the subjects of syphilitic taint, who merely laboured under eczema, lepra, and papular eruptions, which the evolution of the vaccine vesicle had brought about. No specific treatment had been resorted to, and yet the child recovered perfectly. Now such instances might by some have been called cases of children labouring under syphilitic taint introduced into the system by vaccination.

Although I have for a long time been fully convinced that infection cannot be thus introduced into the system, I have never felt myself justified in directly vaccinating healthy children from the virus of vesicles obtained from syphilitic infants ; nor, to my knowledge, has any one else attempted it. The result, however, I feel convinced, would not be to produce syphilis, nor do I think that the practice would be attended with ill consequences. I venture to affirm this from the impossibility of inoculating secondary symptoms, which, in spite of all our numerous experiments, we have never succeeded in producing. Not only has the lancet been used, but portions of the secretion have been applied for lengthened periods to abraded portions of the skin, and to the mucous membrane, but no contamination took place. A few exceptional cases of an opposite kind have been cited by others ; but it will be found on investigation that there has generally been a want of those ordinary precautions which, when taken, explain why the result of these experiments differed from that of all others.

There are plenty of other sources of infection to choose from, besides vaccine lymph. The fœtus may be infected by the father or by the mother ; and infection may come, not from the legal or putative father, but from the true father (perhaps a stranger), who is often not forthcoming when the case is investigated. Experience teaches the private practitioner that these sources of infection are the most frequent ; and it is to these and others we must look, but not to vaccination, for the cause of the complaint."

DIAGNOSIS OF SYPHILIS IN INFANTS.—Although in preceding

pages the subject of diagnosis has been frequently mentioned, I shall, for the convenience of my readers, recapitulate some of the most important points; and in doing this, I must call attention to the fact that, in forming an opinion, a surgeon may be deceived by the statements which are made by the mother, the father, or the nurse relative to the child. The diagnosis is rendered still more difficult, in consequence of symptoms having often disappeared from the one while present on the other, or in consequence of the parties having been under the care of different practitioners.

In recapitulating some of these difficulties I shall state them successively, commencing with those which may occur in the

Mother.—Great difference of opinion may exist on the nature of the disease which is called secondary symptoms. If the reader will turn to p. 407, in which the diagnosis is discussed, almost every form of eruption will be found to have been mistaken for syphilis; and, if the surgeon has not an opportunity of examining the parent, but depends upon the history or description of the disease under which she has suffered, great errors may be committed. What these errors may be, and how to avoid them, I need not here state, as they have been fully described at p. 407 *et seq.* Moreover, as has been recently stated (see p. 550), the mother need never have suffered from syphilis at all, for the child to be infected. *

The diagnosis drawn from particulars given by the

Father often contradicts instead of corroborates the surgeon's opinion. He may have had syphilis years ago, or he may deny ever having had the complaint, or have lost all trace of it at the time of examination; such a history only renders the diagnosis still more difficult. Again, the legal father may be free from the complaint, the child having been begotten by another. The disease may have been contracted from some other source, as occurred in the case mentioned at p. 564, where both parents were free from the disease which was contracted after birth. Lastly, the disease in the father, like that in the mother, may not be syphilis at all, but only resemble it in some particulars. These are some few of the doubtful questions which arise, and require to be solved before coming to an opinion on the case.

The diagnosis of the disease in the

Child may present many difficulties. It is an undoubted fact that a large proportion of children said to be suffering under syphilis, present no traces of any such disease. The difficulty of diagnosis is thus acknowledged by Trousseau, "The different cutaneous eruptions, the lesions of mucous membranes, all those affections which are commonly in France called *gourmes*, whatever be their situation, bear an incontestable similitude to those which are proper to constitutional syphilis, and may deceive a surgeon little accustomed to treat these diseases."—("Archives Générales," tom. xv. p. 148.)

Trousseau says he depends greatly, in forming his diagnosis, on the peculiar yellow tinge of the skin, which he thinks of more value than the copper colour of the eruption. He places great diagnostic value on the cracks which appear on the hands and feet, and considers them signs that are rarely deceptive when present. He also lays

great stress on the combination of several syphilitic symptoms occurring at the same time.

I have seen various affections of the skin in children so often mistaken for syphilis, that I have no hesitation in saying that this is one of the most frequent causes of error. My readers may recollect a very striking instance of eczema related at p. 257, which was mistaken for constitutional syphilis. In the second page of the Introduction, also, is given the case of a little girl who presented most extensive and foul ulcerations of the labia, thighs, and anus, the result of bad food, neglect, and dirt, which, under other circumstances, might have been readily mistaken for syphilitic disease; the complaint, however, got well under attention to cleanliness, water-dressing, tonics, and good food.

Another very common error is, to consider as syphilitic those severe affections of the mouth which are known as aphthæ or thrush, particularly when any suspicious symptoms exist on the skin. I noticed these cases in the first edition of my book, and I have now still greater reason to believe that in many of those instances where a nurse is said to have contracted syphilis from suckling syphilitic children, the disease has been only thrush. Modern microscopical observers have detected parasitic growths in the centre of the cells of swollen epithelium in thrush, a complaint to which ill-nourished children or those brought up by hand are subject; and it is an admitted fact that these complaints are contagious, probably through the sporules conveyed by pap-boats, nipples, and spoons. It is not my object here to describe thrush; I must refer my readers to treatises on the subject; but I would advise surgeons not hastily to attribute to syphilis results due to thrush alone, which often complicates the former disease.

Hennen relates a case in his "Military Surgery," which goes far to prove that aphthæ are not only contagious, but capable of producing constitutional symptoms; he says, "I am intimately acquainted with a physician who contracted an aphthous affection of his lip by taking a last farewell of a most respectable lady who was far advanced in phthisis, and whose lips were affected with those aphthous eruptions which so often arise in the latter stages of that disease. In a short time, the point of his tongue was covered with small and very painful ulcers, extremely like minute chancres, and in some weeks after, he became affected with a scaly eruption of the hairy scalp. I had occasion to particularly examine him about three months after the first appearance of the ulceration of the tongue, the eruption was gone, but from one part of the scalp the hair was dropping very fast." (Page 566.)

I have lately seen a boy, twelve years of age, suffering from worms, with aphthæ on the tongue, patches at the corners of the mouth, and spots of lepra on the back of the head, which might have been mistaken for secondary symptoms had there been any suspicious circumstances attending the case, but happily they were not present.

It follows, then, that amidst this mass of conflicting evidence, the surgeon should not rashly conclude that any cutaneous affection

in children arises from syphilitic infection. The probable sources of error, indeed, are so many, that it becomes very difficult to arrive at a correct opinion. Still, syphilis in children usually presents the train of symptoms spoken of above, which, when they exist, can leave little room for hesitation. They are as characteristic as it is possible for a disease to be; the only point to be then ascertained is, from what source was the affection contracted. Here, again, in many instances, all is clear and patent; but on many other occasions, the reverse is the case, and the truth can only be arrived at by a large share of tact, and weighing well the evidence which can be obtained. In these delicate domestic matters the surgeon should be cautious how he raises the suspicions of families, particularly when he has incomplete evidence of the existence of specific disease.

PROGNOSIS.—In preceding pages I have shown that if a man marries before he has been completely cured of constitutional syphilis (see pp. 550 and 551), the ovum which he has impregnated *may* become blighted, and be thrown off by the female aborting. If the wife goes her full time, the infant will probably soon after birth present the characteristic marks of syphilis, mentioned at p. 541. Observation shows that it is not necessary for the transmission of hereditary disease that the father should at the time of marriage have been suffering from well-marked secondary symptoms; if these have been but recently cured, and the syphilitic diathesis has not been destroyed (see p. 551), the male may transmit the specific disease to his offspring. In such a case, the prognosis always becomes very serious, and, as we mentioned above, the surgeon should give his sanction to such a man's marriage with great hesitation, and, as stated at p. 574, at least six months ought to elapse after the disappearance of all traces of constitutional syphilis before a patient is allowed to marry.

When such a parent has already begotten syphilitic children, and neglects to submit to a course of treatment, subsequent children may or may not become infected: see case of Y. Z., detailed at p. 551. In such instances, the prognosis will be always unfavourable, but no doubt can exist that in good constitutions the disease has a tendency to wear itself out, although we have no syphilometer to measure the quantity of virus existing in the system. In the absence, however, of any such test, we may generally infer that if relapses do not occur, and if no traces of the disease can be discovered in the man, after a careful examination extending over a period of six months, the offspring will not in future be contaminated. Such a prognosis, however, should never induce the surgeon to sanction cohabitation until at least six months have elapsed, as the disease (when mercury has been given) may remain latent in the system for a lengthened period, and many accidental circumstances (alluded to at p. 401), may cause it to break out when we least expect it. This should be pointed out to the patient, who will then be in a measure answerable for the consequences should they arise.

The prognosis has been looked on in much the same light by John Pearson, who says, "Women who have been affected with lues, although apparently free from the disease, have frequently unhealthy

children. It sometimes happens that the first child is very much diseased, the second less so, the third rather unhealthy, and perhaps the fourth has no complaint, from the disease having, as it would appear, been worn out."—"Pearson's Manuscript Lectures," p. 101.)

In fine, all we can say is, the slighter the symptoms and the longer the complaint has lasted in the parents, the less probability there will be of the offspring becoming contaminated.

Although, then, the prognosis must generally be unfavourable, still every now and then cases occur, showing that, notwithstanding the syphilitic diathesis still exists in the father, it does not necessarily follow that syphilis should be developed in the offspring, as the following case will show.

Instance of Constitutional Syphilis in the Father not producing Disease in the Children.

1850.—An old fellow pupil called to consult me about a severe sore-throat, which had annoyed him for some months; on each tonsil there was superficial ulceration, covered with an unhealthy secretion, bearing very characteristic marks of syphilis. He told me that he contracted syphilis in 1842, eight years ago; he took mercury; secondary symptoms followed; he again had recourse to the mineral, as well as the iodide of potassium; the disease has occasionally returned, and again receded under treatment during the last eight years.

Knowing him to be a married man, I asked if his children were affected; he told me that he had been married three years, that he has two as healthy children as can be seen, and they have never shown any trace of the disease, which he is well aware he is suffering from. This, as well as the case mentioned at p. 553, proves that an infected father does not necessarily contaminate his children.

My patient again took iodide of potassium with bitters in large doses, as prescribed at page 478, and soon recovered. I have since seen him, and his health is now quite re-established.

The favourable or unfavourable prognosis of hereditary syphilis which may have appeared in the child apparently depends upon a variety of circumstances. When secondary symptoms occur in an otherwise healthy infant, and its case is treated early, the most favourable results may be expected; but if the child is puny, the mother in bad health, or the disease has been already allowed to make great progress, we must not give a very favourable opinion. In even the very worst forms, the complaint may be entirely cured, provided the parents have the ordinary means of comfort, and will follow the directions of the surgeon; but, unfortunately, these poor little children are often neglected, and die from want of care and breast milk, victims to syphilis, mercury, scrofula, and neglect. It is from a combination of these causes that the mortality is so great as is shown by the annexed table of the Registrar-General. Relapses, as in adults, are by no means uncommon, particularly when insufficient treatment has been employed, or proper treatment neglected.

TABLE showing the Ages at which 203 Children died from Syphilis in the Years 1846, 47, 48, in the Metropolis. Extracted from the Weekly Returns published by the Registrar-General.

AGE AT DEATH.	DURATION OF DISEASE.					TOTAL.
	Under months.	Not mentioned.	Congenital.	Under one month.	Under two months.	Above two months.
1	18	19	3	...	...	40
2	15	31	11	3	...	60
3	11	13	4	4	1	33
4	5	17	1	3	...	26
5	6	7	...	...	1	14
6	2	7	...	...	1	10
7	2	1	...	...	1	4
8	1	1	...	...	...	2
9	1	2	...	...	...	3
12	2	7	...	...	2	11
Total	63	105	19	10	6	203

Fatal cases of syphilis in children are much more common in the Metropolis than the profession is aware of. Some few years ago, the Registrar-General, at my solicitation, commenced noticing in his weekly tables the exact age at which children perished from syphilis, as well as the immediate cause of death. In consequence of his kindness, for which I cannot too publicly express my thanks, I am enabled to lay before the profession the above interesting table.

We thus find that 203 infants under one year of age perished from syphilis in the space of these three years.

The most fatal period is when the infant is still under two months :* sixty children perished under that age. The next largest number, namely, forty, died before they were one month old. Thirty-three died before they were aged three months. If the child survives this period, it may linger on and perish at any time between this and one year ; but it is surprising to see how few fatal cases occur after the infant has reached its first birthday ; and we may suppose that if, by means of treatment or a good constitution, the child survives the first year, it may be reared.

Medical men appear to have very erroneous notions of the words—*congenital syphilis* : as I understand the term, it should mean that the child was born with marks of the disease upon it. But I presume from the number of infants which are said to have laboured under congenital syphilis, that the registering surgeons meant to express only that the disease was hereditary ; for the experience of all surgeons who have seen much of children infected with syphilis, proves that an infant is rarely born with traces of the disease, as shown at page 541.

The Registrar-General has also furnished me with the numbers of

* Trousseau thinks the disease generally proves fatal when it appears within the month after birth, but is curable when it occurs two, three, or four months later.—(*Gazette des Hôpitaux*, 1848, page 79.)

the deaths from Infantile Syphilis in 1858, in continuation of the previous table. I have arranged this table so as to show the age at which death occurred in weeks up to the third month, and afterwards by months, up to a year.

Table showing the Ages at which 133 Children died from Syphilis during the year 1858, in London, under three months old.

Age at death.	Number of children.
Under 1 week	5
" 2 "	9
" 3 "	13
" 4 "	11
" 5 "	5
" 6 "	10
" 7 "	10
" 8 "	18
" 9 "	17
" 10 "	11
" 11 "	5
" 12 "	19

Total under three months of age, 133

Table showing the Age at which forty-five Children died from Syphilis during the year 1858, in London, over three months of age, but under one year.

Age at death.	Number of children.
Under 4 months	12
" 5 "	9
" 6 "	6
" 7 "	3
" 8 "	2
" 9 "	2
" 10 "	4
" 11 "	1
" 12 "	6

Total over three months, but under one year, 45

Total under one year of age, 178

The immediate cause of death is further shown in the following list :—

Table showing the immediate cause of Death in 178 Children infected with Syphilis, who died in London in the year 1858, under one year of age.

CAUSE OF DEATH.

Inability to take nourishment	4
Thrush	2
Cachexia syphilitica	9

Marasmus, wasting	10
Exhaustion.	6
Debility.	4
Convulsions	7
Eczema	2
Muco-enteritis	1
Diarrhœa and vomiting	7
Hydrocephalus	3
Ulceration of skin	5
Pyæmia.	1
Bronchitis	5
Erythema	1
Diphtheritis	1
Lepa, Psoriasis	5
Pneumonia	2
Immediate cause not stated, or only generally stated as syphilis	103
<hr/>	
Total	178

This latter table shows, I think, most clearly, that it is not syphilis *per se*, that causes the mortality among infected children in London. In my own practice I have found infantile syphilis a very manageable disease. The child at birth is often healthy and thriving.

But if, when the effects of the disease make their appearance, mercury be given carelessly, especially by internal administration, diarrhœa is almost to a certainty added to the infant's other ailments, and death is not unfrequently the consequence of this double trial. If again, as often happens, the disease is allowed to run its course unchecked, it will probably in most cases kill the child. And if to the disease be added any depressing influence, such as bringing up by hand, this probability is converted into little less than a certainty. But if the syphilitic taint be diagnosed early, and the case be carefully watched and treated in its earliest stages; if mercury be employed judiciously in the way described at page 586; and if the mother's health (supposing her to nurse the child herself) be attended to; or if the child be brought up by a healthy wet-nurse, I believe that in nearly every case not only may the child's life be saved, but it may be reared as easily and become as healthy as if neither it nor its parents had ever had the slightest taint of syphilis.*

There are many exceedingly well-intentioned persons who think that no checks should be placed on syphilis. They are disposed to support every sort of charity or institution, but turn with horror from a Lock Hospital, as likely to encourage immorality. Some go even further, they will subscribe to asylums where repentant Magdalens are received, but they will not assist in maintaining an institution which shall succour these poor children who soon after birth become a living mass of corruption, linger a few months, and then perish in the proportion we have seen above.

* In a paper I read before the Statistical Society (reported in vol. xxii. of their Transactions), I spoke of the great mortality among illegitimate children, and

TREATMENT.—In describing the treatment of an hereditary disease like infantile syphilis, it is not sufficient to consider only the remedies to be given to the child when born. The mother's health while pregnant or nursing is quite as important.

PREVENTIVE TREATMENT.—In order clearly to understand the proper principles that should guide us in the preventive treatment of infantile syphilis, we should keep in view the physiological facts that bear upon the question. Giving mercury at random to mother, husband, and child will not ward off the disease. I have already, at page 564, stated the consequences of this indefensible course of procedure.

Treatment before Marriage.—When the surgeon is consulted for indurated chancre by the future father before marriage, he should, of course, treat the sore at once, and effectually remove, if possible, all traces of the malady. If he succeeds in this, he should, in my opinion—as I have stated above, p. 569—take the precaution of enjoining a period of quarantine of at least say six months after the disappearance of the induration, before sanctioning the marriage. Should this period pass without any outbreak of secondary symptoms, and should the patient's health be good, I think the surgeon may then give his consent.

In my own practice I have not yet had cause to regret having adopted this period of quarantine, short though it may seem. These restrictions, be it remembered, apply only to indurated chancre well diagnosed. As to gonorrhœa and soft chancre, I should give my consent unhesitatingly to a man's marrying as soon as the disease has been locally cured. I have no fear of these affections producing any ulterior bad effects.

Treatment after Marriage.—After six months, then, of freedom from syphilitic symptoms, a man may safely marry in most cases. Still I can suppose a case in which some months after marriage secondary symptoms may break out in the father. Even here the surgeon would show great lack of discrimination were he immediately to give all parties mercury. He should bear in mind that, as has been proved in the cases cited at pages 553, 570, the child as well as the mother *may* escape infection altogether. The father therefore should be treated quite independently, the mother meanwhile being carefully watched, and when any traces of secondary symptoms appear, it will be time enough to begin treating the complaint. If this becomes necessary, the only difference to be made in her treatment on account of her being pregnant, should be to take additional precautions to insure the mercury's acting as it ought to act. The proper treatment of the mother is the best preventive treatment against syphilis in the child.

GENERAL TREATMENT OF THE MOTHER.—Supposing, however, that the surgeon is only consulted after secondary symptoms have shown themselves in a *pregnant woman*, I should still advise exactly the

there endeavoured to show that syphilis is not the cause of this mortality, but that it depends rather upon want of breast-milk and the destitution of the mothers. These are questions of great social importance, and deserve the attention of the philanthropist.

same treatment as if she were in an unimpregnated state. Observation has proved to me that the fears of the surgeon who dreads to give a pregnant woman mercury are chimerical. It has been a very prevalent notion in our profession, that syphilis requires different treatment in pregnant women from what it does in others. I am at a loss to know in what this difference consists, or what treatment is fit for the one which is not equally good for the other. Among the numerous cases of syphilis I have seen in pregnant women, the symptoms have been exactly similar to those we see in women who are not pregnant. Mercurial treatment of the mother seems really to have no evil effect on the foetus. It is an error to suppose that mercury will induce miscarriages. Abortions occasionally take place; the child is sometimes born dead; at other times it sickens a few weeks after birth; and this happens in cases where no medicine has been given, as well as in those which have been largely treated with specific remedies. The surgeon must be prepared to treat the mother's disease as if pregnancy did not exist.

When a pregnant female presents constitutional symptoms, I treat them on the general principles laid down under the head of treatment of secondary symptoms, page 415; but before commencing mercury, I always satisfy myself that the female is herself actually suffering from symptoms which the surgeon can identify as those of syphilis. The mere fact of the occurrence of repeated abortions or of having had successive dead children is not by itself enough, in my opinion, to sanction a specific treatment. It is true that, when the cause of abortion has been ascertained, treatment should be commenced, not with a view of eradicating syphilis (which may not exist), but for the purpose of preventing abortion, and if mercury is thought necessary on this score, let it be given. Given in appropriate doses, mercury is borne quite as well by the pregnant as by the barren female, provided the same care is taken to avoid any of the ill consequences the mineral may produce.

I should have no hesitation in producing the effects of mercury either by frictions or judicious internal administration, and I should continue it as long as I found it necessary. I would not, however, give it so as to affect the gums at the moment of parturition. At this period, it must be postponed, but in the earlier stages of pregnancy, if the indications of disease call for its employment, the existing pregnancy should not prevent our using it.

Again, if after the patient has been confined and convalescence re-established, symptoms should appear in her of unmistakeable syphilis, I should pause before subjecting her to a course of mercury, particularly if she suckled her own child.

Although pregnant women bear mercury well, nurses and those suckling should not take it, if it be possible to avoid it. I find it diminishes the quantity, and alters the quality, of the milk; induces diarrhoea in the child, and aphthæ in its mouth: and these last act as irritants to the nipple of the nurse. The peevishness of the child causes the mother to have bad nights, and her health suffers, and thus mercury acts injuriously on the child, the child on the nurse, and the resulting affections on both.

But if an unhealthy nurse or mother is not suckling her child, there is no reason why she should not take mercury or undergo the treatment which may be thought necessary, and which has been particularized at page 415.

TREATMENT OF THE FATHER.—The preceding pages will have prepared the reader for the few observations I have to make on the subject of the treatment of the father. If secondary symptoms are present in him, I should recommend general treatment; but the case of Y. Z., given at page 551, shows that, even without any treatment at all, the disease has a tendency to wear itself out; and although the first child may be born diseased, yet that subsequent ones need not necessarily be infected. The surgeon, however, would not be justified in sanctioning the father's abstaining from treatment; he should be recommended to submit to it just as any other person who labours under secondary symptoms. We should, however, pause before prescribing mercury or general treatment where only a suspicion is entertained that abortions or infection depends upon some latent syphilitic disease in the father. To credit some recent works, accoucheurs have not the least hesitation in salivating father, mother, and child, as well as nurse, (I only wonder they do not recommend the same treatment for the grandmother), on the merest suspicion of syphilis. Such treatment is not creditable to the age we live in. It is far better not to prescribe for syphilis till we meet with it. The surgeon will have enough to do in curing constitutional syphilis when it presents itself with its unmistakable characters, and until this is effected, a divorce *a thoro*, although not *a mensâ*, will be necessary, or the wife may become impregnated with an infected fœtus.

The treatment of the father is not, however, always to be guided by the preceding rules; he may have taken mercury and iodide of potassium, and yet these medicines may, in certain exceptional cases, where the syphilitic diathesis has been fully established, have failed in curing the disease. The following case is one of a kind that occasionally comes under our notice.

A gentleman contracted syphilis some years ago, and thinking himself cured, married, and infected his wife (so he says), and the statement was corroborated by his medical adviser. She miscarried twice. He took mercury and iodide of potassium. During the next year another miscarriage happened from fright. In January, 1850, his wife was confined after four days' labour, the pains being sluggish, of a weakly child that lived only a few hours. The medical attendant (who had never seen the lady before) did not suspect syphilis, and the child was in no way marked (I particularly inquired about this fact). The father still bore the slightest trace of a whitened patch on his tongue, but no other symptoms, and has had none for at least a twelvemonth. The lady was naturally nervous, and anxious to have a family. She presented no traces whatever of syphilis. What did I recommend? was the question put by the father. As he had taken repeated courses of mercury, and as a child had been born living, I consoled him with the recital of other instances in which the disease showed that it had nearly exhausted itself, and I gave him hopes that this would occur in his case, and that his wife would rear her next

infant ; but I would not sanction another course of mercury. To this he agreed. The result, however, has never come to my knowledge.

TREATMENT OF THE INFANT.—When a child is brought to me soon after birth, presenting as yet no marks of syphilis (although one or both parents are said to labour under secondary symptoms), I do not think it advisable, as I have mentioned, to begin treating the infant at once as if it were suffering under the affection. The child may escape, particularly when the mother has been only recently infected (see page 557) ; and the surgeon had better wait until unequivocal symptoms of syphilis occur in the infant, before beginning to give mercury. Nevertheless, all proper precautions should be taken to prevent the ill consequences which may be likely to arise. I should, in such a case, abstain from all preventive treatment of the mother in the way of pills, powders, or ointment ; but I am in the habit of recommending her to leave off suckling the child, not in the belief that her milk could contaminate the infant, but because it can only imperfectly nourish it ; and if there be in the child any hereditary diathesis, any such depressing influence as unwholesome milk, is very likely to develop it. If, however, a wet-nurse cannot be procured, I should prefer the mother suckling her own child to bringing it up by hand, as I think the infant runs less danger from taking the milk of its mother labouring under syphilis, than from being brought up by hand.

My objection to the hand-feeding of infants is not fanciful or groundless. The mortality among children thus nourished is frightful. All authorities agree that the risk is very great. One of the most striking instances with which I am acquainted is that cited by L'Abbé Gaillard, in the "*Annales d'Hygiène Pub.*," vol. xix. p. 40. He says, "At X. no foundling is suckled ; all that are received are brought up by hand, and the reason given is, the fear of infecting the nurses with syphilitic diseases." All steps were taken to remedy the mortality which ensued among the children, but without avail, until the authorities decreed that wet-nurses must again be employed. He goes on to say, "The mortality during the year 1834, when the children were attempted to be brought up by hand was frightful. Of 127 foundlings so fed, only 29 remained alive at the end of the year." In another hospital, he says that 233 died out of 362 received in the same year ; and extreme cold and warm weather appeared to increase the mortality.

It has generally, however, been considered a most serious risk to place an infant born of syphilitic parents (although as yet it may have shown no marks of syphilis), at nurse with a healthy woman. It has been thought likely that the nursing will infect the nurse as well as her own children through her. It is supposed to have been so completely proved that such infection has occurred, as to leave no doubt in the minds of accoucheurs on the matter. The chief instance cited in behalf of this view is a case which occurred in Cork in 1845.

As this opinion is still very prevalent, and as my own view of the subject is altogether opposed to it, I need not apologize for discussing the topic here at some length. Let me first call my readers' attention to the case at Cork, which is a type of others met with in practice.

Divested of all its technicalities, the case is simply this (see *Cork Reporter*, vol. xiv. 1845):—

Mrs. and Mrs. Cottrel, a respectable mechanic and his wife, were married in the year 1843, both apparently in good health. Mr. C. acknowledges that he was affected with primary and secondary syphilis some time previously, but had been perfectly cured before his marriage.

In September, 1844, their child was placed at wet-nurse with Julia Walsh, a labourer's wife, a woman of good constitution and character. It would appear, from Dr. O'Connor's evidence, that the child was in wretched health, and was observed to have some sores on the mouth, around the anus, and on the scrotum. In his last letter he likewise states that Mrs. Cottrel, before giving the child to nurse, was under treatment for an intractable sore on the breast, which took several months to cure. Dr. M'Evers says, on the contrary, that the child, when sent to nurse, was apparently in perfect health, with the exception of a sore mouth, which, from the description, appeared to have been of a simple aphthous character. It had no sore nor blotch on its body.—(See also *Dublin Med. Press*, vol. xv. p. 252.)

The report goes on to say, “*in a few days the nurse, Julia Walsh, became diseased, and she diseased her husband; in fact, all the family became diseased, and the child was returned to the mother, Mrs. Cottrel.*”

Dr. O'Connor states in his letter, “Shortly afterwards, the nurse having perceived a sore on her nipple, and that the rash on the child became more general, went to a quack, who pronounced it to be chicken-pock, which he would readily cure, and gave her twelve pills which made her mouth sore. Mrs. Walsh's alarms not being quieted, she remonstrated with the father of the child on her condition. He accompanied her to the man who was in attendance on her (I suppose the quack), promised to pay him for curing the nurse and child, and at the same time put his own wife under the quack's care.”—(*Lancet*, vol. i., 1846, p. 691.)

Now, Dr. M'Evers states another view of the case. This sore aphthous mouth in Mrs. Cottrel's child produced a common sore nipple on Mrs. Walsh's breast; she, getting alarmed, and having heard something whispered of the parents, took it for granted that she herself was diseased, and immediately applied to a quack, called in the report a herbalist, who plied her with his nostrum, mercury, and hence arose the train of subsequent symptoms.

Dr. M'Evers, moreover, states that he examined the nurse's (Walsh's) mouth and considered the sores therein not to be syphilitic, although pronounced by others to be such, but to result from the abuse of mercury. At the time of the trial, Mrs. Walsh was in good health, with the exception of the mouth and throat, the whole mucous membrane of which appeared studded with ulcers and abrasions, apparently from mercury.—(*Lancet*, vol. i., June, 1846.)

The nurse (Julia Walsh) brought an action against Mr. Cottrel, in which the preceding conflicting evidence was given. The assistant-barrister (Mr. Baldwin) took time to consider what judgment he should come to, and subsequently Cottrel, the father, consented to pay

a sum of money agreed on between the parties, so that no decision was ever come to by the judge.

Now, this is the most reliable instance we have of a nurse supposed to be infected by a syphilitic child, but the evidence on which it is founded is most unsatisfactory ; and so it is in all instances on record of nurses alleged to have contracted diseases from their foster-children. In the early history of the case all depends apparently upon particulars gathered from non-medical persons. At the time the child and nurse were first attended by qualified surgeons, mercury had been administered by a quack, and I can readily imagine the difficulty that presented itself in deciding whether the disease was syphilitic or mercurial.

The value of the medical evidence may be best judged of from the following observations on the case in a leader of the *Lancet*, vol. i., 1846, p. 636 :—

“Surely in an important case like this, which is likely to regulate future decisions, a medical practitioner might be at least expected (if ignorant of the present state of science), to come prepared by the perusal of authorities, before giving an opinion. Had the medical witnesses done so in this case, they would have found that John Hunter did not believe in these supposed contagious cases ; and that M. Ricord, and more recently Mr. Acton, in this country, positively deny the contagion of secondary symptoms. The whole question hinges on the diagnosis, and it would appear that neither the child nor the nurse ever had syphilis ; and such would have been, probably, the opinions of Drs. O'Connor and Bull, had they seen the case before the plaintiff had been drenched with corrosive sublimate by the ‘herbalist’ impostor.

“We cannot close these observations without alluding to the following words by Dr. Bull, one of those who gave such positive evidence of the contagion of secondary syphilis :—‘He himself had observed the disease *one hundred times* in nurses who got foundlings to nurse.’ No other person, Irish or English, ever witnessed anything of the kind before. John Hunter met with a few *supposed* cases, which he details ; Ricord alludes to one or two ; and others, who have had much greater opportunities than Dr. Bull could have ever possessed of seeing syphilis, have witnessed such cases but rarely. Might not Dr. Bull discover that he has classed as syphilis cases similar to the one reported by Mr. Acton in the *Lancet* for January, 1845,* which was *eczema rubrum* ? If he sifts his evidence, and takes into consideration the ignorance of his patients, their inattention to symptoms, and the occasional immorality of wet-nurses, he may pause before he again states that he has met with *a hundred such cases*.”

I think it is still at least an open question, whether a syphilitic child can infect a wet-nurse. My own opinion is, that no instance of the fact having occurred has yet been produced. I have been consulted about many supposed cases, but have been always able to prove, either that the diagnosis has been incorrect, or that the disease has been contracted from some other source, and that some deception has

* The case is detailed at page 257 of this treatise.

been attempted, for the purpose of obtaining money or of concealing the cause of infection.

I am happy to say that the testimony of nearly all those who have had the greatest opportunities of investigating syphilis, is in favour of the opinion that secondary symptoms are not capable of being transmitted. I have cited numerous cases in which this has been tried and failed, under the most favourable possible circumstances. Let me recal a few. At page 406, I have detailed the case of a girl suffering from condylomata at the anus, who slept with the mother, and I stated that the irritation of ulcerated condylomata coming in contact with the mother's thigh produced a sore, but no secondary symptoms.

In the case of Y. Z., mentioned at page 551, the affection of the scrotum produced no effect on his wife, although cohabitation was continuous, and she was confined of two children. At page 281, a case is cited showing other errors which the surgeon may fall into. On the other hand, diseases very different from syphilis may be transmitted. Hennen in his "Military Surgery," at page 566, says, "A child with an aphthous affection of its mouth, will often communicate a most severe disease to the nipple of its mother, capable of being propagated to another infant, and of exciting severe constitutional disturbance." Again, p. 558, Hennen states, "I know it to be a positive fact, that a nurse with secondary symptoms may suckle children with perfect impunity to them." Ricord denies *in toto* the possibility of a nurse becoming infected with syphilis by suckling an infected child. He cites the following instance in his work on Inoculation, p. 508, which proves that a nurse may suckle a truly syphilitic child and her breasts become ulcerated, but notwithstanding, neither herself nor her own child became infected.

Now, supposing any meddling surgeon had given this nurse mercury, so as to impoverish her blood, her body would probably have presented marks of spurious secondary symptoms, and her diseased milk might have affected the foster child. Such are the risks we run of seeing a simple case made very obscure by bad treatment and indiscriminate diagnosis. But I will translate the case in full, that my readers may judge for themselves of its importance.

"God. . . Euzalie, 28 years of age, came into hospital on the 23rd March, 1834, No. 10, Wet-nurse ward.

"This patient states that she has never suffered from primary syphilitic affection; her husband has always enjoyed good health; she is the mother of four children, and during the period of suckling has never suffered from a bad breast.

"Four months ago she took charge of a foster child, the infant was very thin, but had no affection either of the mouth or any other part of the body, nor wound nor ulceration of any sort. Three months later, the infant presented on its forehead and anus large elevations of the skin, the surface became purulent and covered with scabs; the infant in addition presents on its body spots covered with scales; these, in the situation of the buttock and calves, assumed the appearance of deep ulcerations. During six months, God. Euzalie continued to suckle the child, but its disease increased daily, and the infant was then taken back to its parents, and ultimately died.

"Up to this time the nurse presented no form of disease; but eight days later on the nipples of both breasts cracks showed themselves, one only on the left nipple, four on the right. Notwithstanding this, she continued during fourteen days to suckle her own child, which had never ceased to enjoy excellent health. The breasts were dressed with opium ointment (ʒj. to ʒiv.) and an astringent wash; the patient finding, notwithstanding the treatment, that the affection of the breasts was getting worse, determined to apply to the hospital.

"On both sides, on the breast and on the nipple, we observe ulcers presenting a grey surface, the edges perpendicular, irregular, and presenting all the characters of simple syphilitic sores.

"*March 26.*—We inoculated the right thigh with the pus taken from the sore on the right breast, and the left thigh with matter taken from the left breast. The breasts were dressed with opium ointment.

"*March 27.*—The inoculated points red.

"*March 28.*—No pustule appeared on the inoculated points. The sores on the breasts treated with simple dressing.

"*April 6.*—The sores getting clean.

"*April 12.*—The bottom of the ulcerations nearly level with the surrounding parts.

"This patient was obliged to leave on account of business, but returned shortly after. One deep crack alone remained, with the matter of which we again inoculated the left thigh, but without producing any result; the crack was washed with lot. sod. chlorinat., and a week after the patient went out well."

I would, however, caution my readers, that however much they may be disposed to repeat these experiments on a person already diseased, they must be careful how they inoculate others from the secretions of an infected individual.*

* PROSECUTION AT LYONS FOR SYPHILITIC INOCULATION.—A recent prosecution, instituted by the government authorities, against two Lyons practitioners, has caused an immense sensation in the medical body of that city. While the medical press feels honoured in having so frequently to register a multitude of facts which tend to exhibit the importance of the services rendered by medical practitioners, it must also give proof of its impartial equity in laying open those blameable errors committed now and then by some members of the body. The therapeutical conduct pursued by two of our *confrères*, under the circumstances we are about to relate, has caused us the deepest regret, and we are glad to believe the mere relation of this unfortunate abuse of medical power will be sufficient to prevent any recurrence of it under analogous circumstances. On the 4th December, 1858, a lad from *La Charité*, aged ten, was brought to the Antiquaille Hospital at Lyons, in order to be treated for a confluent *teigne faveuse*, implicating the entire scalp, the child being also in bad health and exhibiting some symptoms of scrofula. After nearly a month's ineffectual trial of the ordinary treatment, M. Guényot, interne of the venereal department, asked permission of the surgeon, M. Gailleton, to inoculate the child with the pus taken from a patient suffering from secondary syphilis, in the form of condylomata around the anus. This was granted, and four insertions were made. During a month no result followed; but on February 10, two superficial ulcerations were observed, and during March a roseola was observed on the trunk which disappeared in a week. The 9th April all disappeared, and the *teigne* was amended, and by August it was cured, and the child was remarkably well. These facts coming to the knowledge of the Minister of Justice, by means of a publication of the case by M. Guényot, he ordered a prosecution, and on December 8, M.M. Guényot and Gailleton were summoned before the Correctional Police of Lyons. In defence of their conduct, the accused cited the result of a consultation which had been held by the three chief surgeons of the Civil Hospital of Lyons and the two

Pearson says, in speaking of the contagion of secondary ulcers, &c., "We have carefully collected a few facts, but *have not been able to arrive at absolute conclusions*. There have been many instances of nurses who have given suck to children who had a disease in the mouth, having first a sore on the nipple, then enlarged glands in the axilla, and afterwards blotches and sore throat. The child had probably no appearance of the disease till some weeks after birth. It may be concluded that all these cases are not venereal, since we have cured many patients with sore throat and blotches from this cause without mercury. It more frequently happens that they are not, than that they are venereal; and we have been assured, that after secondary symptoms had existed several weeks in other parts of the body, an ulcer had formed upon the labia, by means of which a sore has been produced in another person; but this is so uncommon an occurrence that it is more likely the sores were actually chancres."—("Pearson's Manuscript Lectures," p. 83.)

Children thus affected (he is speaking of sore throat and other secondary symptoms) have appeared to communicate the disease to women who suckle them. We have cured several women in whom the disease could be traced from no other cause, and whose symptoms would yield to no other mode of treatment but mercury.—(*Loc. cit.*, p. 100.)

John Hunter also remarked on these doubtful cases. He cites several instances in his chapter, headed Diseases resembling the Lues Venerea, commencing p. 475; Palmer's edition. It is impossible for me to find room for the details; those anxious to read them must refer to the book itself. At page 478, he says, after seeing the case, he did not conceive it to be venereal; all medicines were left off, and the patients recovered.

At page 479, he adds, after noting another case, "The disease seemed no longer to increase, and in twelve or fourteen days after this, entirely disappeared without taking any medicine, except a few ounces of the decoction of bark."

In a third case, he adds, "She got well without taking any medical physicians of the Antiquaille, the conclusion come to being, "That comparing the flourishing condition of the patient's health at the present time, with the inveterately obstinate and serious affection of which he was the subject, and the wretched state of general health in which he was when he came into the hospital; and bearing in mind the regular, skilful and methodical treatment he has been submitted to, we are of opinion that a great service has been rendered to him by the practitioners who treated him, and by no other means could his health have been better or more rapidly restored." The Tribunal fined M. Guényot 100 francs, and M. Gaillon 50 francs. In our opinion, the authorities were right in opposing such experiments, as they always are useless, and often mischievous, being based upon a false principle, and fatal in practice. We blame such experiments, and will exert all the influence we possess in order to prevent their repetition. Who can tell us whether this child, contaminated in its tenderest years by the hand whence it sought relief, may not yet drag out a wretched, etiolated, cachectic existence? And who can tell, though said to be so wonderfully well now, and exhibiting no actual symptoms, but that he may not, perhaps years hence, manifest symptoms of a communicated diathesis? And again, who can say that, arriving at manhood, he may not be the father of children bearing the marks of the parental stigma? We can understand, and we glory in good professional confraternity; but really we think that the five Lyons practitioners who have delivered so favourable a consultation have been blinded by their good wishes. A properly understood *solidarité* cannot be pushed to these limits.—(M. Legrand du Saulle, in the *Gazette des Hôpitaux*, Dec. 24.)

cine." And at p. 477, he says, "The cases being all derived from one stock, show as much as possible that new poisons are rising up every day, and are very similar to the venereal in many respects, although not in all."

A modern writer, Trousseau, speaks thus hesitatingly on the subject :—"Do not observations exist which lead to the belief that these local lesions (fissures of the lips) are transmittted to the nurse by direct inoculation, and produce in her alterations of the same kind, sometimes so severe as to destroy the point of the nipple?"—(*Archives G n rales*, vol. xv. p. 165.)

Yes, we reply, such cases do exist ; but it is by no means proved that they arise from secondary syphilis. (See the case cited by M. Ricord at page 580.) The surgeon should be very cautious in attributing these contagious diseases of the mouth or nipples to constitutional syphilis.

We believe that such cases may be divided into two classes. In the one, the sores have no specific character ; they are the result of irritation and the contact of the diseased secretion of the child's mouth with an irritable nipple. Such instances are not followed by secondary symptoms. The second category includes those cases where the nurse has suffered under syphilis, although she may have reasons for denying it, or motives for concealing it, wishing to attribute it to a sickly child she has taken in to nurse ; such cases are very frequently followed by secondary symptoms, and may give rise to the supposition that the child was the cause.

Remembering that an infant's well-being may depend upon being suckled by a healthy wet-nurse instead of a diseased mother, we may now proceed, by the light of the evidence above collected, to answer the really important question for a surgeon—viz., What is the responsibility which he incurs in sanctioning the placing such an infant at nurse? To answer this, I have looked into the most popular works on Medical Jurisprudence, and having met with no notice of the matter, I submitted a series of questions founded on the preceding evidence, to Dr. Taylor, who, in the kindest manner, returned the following answer :—

"DEAR SIR,—I have below given to your questions as full an answer as the circumstances yet known regarding the point in dispute, appear to me to admit of. I am, yours very truly,

"W. Acton, Esq.

ALFRED S. TAYLOR.

"The alleged Transmission of Syphilis from Child to Nurse.

"A woman, acting as wet-nurse to a child, born syphilitic, contracts what she supposes to be syphilis as a result of suckling the child, and sues the parents for damage to health, &c., thus sustained.

"Before she could recover in such action, it must, however, be clearly proved by evidence satisfactory to the court and jury ; 1st., That the disease under which she was labouring was really syphilis ; and, 2nd, that she could not, by any possibility, have contracted the disease in any other way.

"If, as it is alleged, syphilis cannot be thus transmitted from child to nurse, and no such case has ever been met with by any authority on the subject, this would be strong evidence for the defence; and if supported by good medical opinions, it would probably lead to the non-suiting of the plaintiff (the nurse).

"If it could be shown that the disease in the nurse was not syphilis but some other affection, or that, being syphilis, it might have been acquired by the nurse in some other way, and not as a result of the act of suckling the diseased child, then in either case, the plaintiff could not recover damages.

"Her case may, however, be supported by good medical and circumstantial evidence. Strong medical opinions might be given that the disease in the nurse was really syphilis, and that it might be transmitted from child to nurse. Again, the witnesses for defendants (the parents), although they might not have met with a case in which the disease was transmitted by suckling, would probably, in such a novel question, find great difficulty in swearing that its transmission under the circumstances was *absolutely impossible*. As cautious men, and having a due regard to the abstruse nature of 'infection,' they would confine themselves to swearing that they had never met with nor heard of such a case, and to the best of their judgment and belief it could not occur. This would not suffice to defeat the plaintiff's claim, if it were otherwise well supported.

"In a conflict of medical opinions, and when direct proofs are wanting, a jury is commonly directed to look to all the circumstances irrespective of medical evidence. If the case stood as above supposed, and the plaintiff was of excellent moral character, and there was no reason to believe that she could have contracted the disease in any other way, the jury would probably find in her favour.

"The recommendation of a wet-nurse by a medical man would not, in my judgment, affect the right of the woman to claim compensation from the parents, since they are the parties who hire her and must be responsible for the results of such hiring. Whether the parents would afterwards have a right of action against the medical man for recommending them to employ a wet-nurse, knowing the child to be syphilitic, is another question. In order to recover in an action for damages against him, it must be proved, that by such recommendation he showed himself to be grossly ignorant and unskilful in his profession. He might, however, quite innocently and without any just imputation of ignorance or unskilfulness, make such a recommendation; because the fact of syphilis being thus transmitted is a *questio vexata*. He may have believed, *bonâ fide*, that the disease could not be thus conveyed from child to nurse, never having heard nor met with such a case: damages could not therefore be fairly claimed of him, because he had acted to the best of his judgment, and at the most it could only be alleged against him, that he was guilty of a venial mistake into which nine-tenths of the profession would, under the same circumstances, have fallen.

"ALFRED S. TAYLOR, M.D., F.R.S."

Such being the state of the law, I thought it advisable further to

inquire of Dr. Taylor, if the parents' and surgeon's responsibility would not be best cared for by frankly stating to both parties the facts ; and his reply is so satisfactory, that I publish his note, which now renders the surgeon's course very clear.

" 15, St. James's Terrace, June, 1860.

" DEAR SIR,—If a nurse were fairly warned by a medical man of the possible risk she incurs by suckling a syphilitic child, in the event of any disease appearing in herself, she could not recover damages against the parents. She would stand in the position of a consenting party.

" For the same reason, the parents would have no ground of action against a medical man who suggested to them the possibility of infection ; while, at the same time, there would be but little fear of its transmission. If they, after this candid statement, employ the nurse, they do it at their own risk and on their own responsibility.

" The proper conduct for a medical man to pursue in such a case to avoid all legal liability, is to state to the nurse and the parents, in the presence of each other, the alleged possibility of infection, and he must give his own opinion whether for or against this view. If, after this, any disease should appear in the nurse, there can be no ground of action on the part of the nurse against the parents, or of the parents against the surgeon. All parties would be acting voluntarily, and taking upon themselves the risk knowingly.

" It is, of course, medically advisable that a syphilitic child should be withdrawn from the mother, and put to a healthy wet-nurse.

" I am, my dear sir,

" Yours very truly,

ALFRED S. TAYLOR."

" W. Acton, Esq.,

Guided, then, by the recommendations above given, the surgeon should procure a healthy wet-nurse. To prevent any deception or give the nurse any chance of falsely charging the parents or medical man with having deceived her, let the surgeon carefully examine the nurse, and let him warn her that sore nipples are very liable to occur, and desire her to apply to him the moment the breast becomes in the slightest degree affected, as the irritation of the child's sore mouth may readily produce chapped nipples, not in virtue of anything specific, but just as aphthæ and other simple causes might.

I need not remind my reader that he should not jump to the conclusion that the disease in the nurse is syphilitic, nor need he give her mercury, but treat the case as one of ordinary sore nipples.

Nurses are often very suspicious and gossiping, and if the least suspicion attends the case, others will be consulted, and quacks may prescribe, and, as in the case cited at page 578, alter the character of the disease very much. The judicious practitioner will attempt to prevent all this mischief, and having obtained a healthy, desirable nurse, the sooner treatment of the infant is commenced the better (provided always the child presents well-marked traces of syphilis), but not until a clear diagnosis has been made.

I have been several times consulted as to whether a nurse could recover damages ; and in all the instances I have advised that the

parents should not be sued, and the cases have not come on for trial. In acting on the above recommendations of Dr. Taylor, I have carried out my own convictions, and, I trust, spared the distress of mind which exposure would have caused, and prevented several cases of perjury.

To return, however, after this long but necessary digression, to the treatment of the infant which is placed with a wet-nurse. Supposing no secondary symptoms have appeared, precautionary measures alone should be taken, and the general health attended to. The child's mouth should be constantly watched, and, on the slightest suspicion, it should be cleansed with warm water, to prevent the little parasitic plants, which form in thrush, from remaining in contact with the mucous membrane. If, in spite of these measures, thrush appears, the local applications of borax and water, \mathcal{Oj} . to the \mathfrak{zj} ., or nitrate of silver, commencing with a quarter of a grain to the \mathfrak{zj} ., may be used.

As in adults, the skin must be acted upon, and the greatest cleanliness enjoined; warm baths twice a week should be prescribed; and the child had better be confined to a large airy room with a fire in it in winter, and even in summer cold air should not be too freely admitted. In my own practice I now never give mercury internally to syphilitic infants; and I have found no benefit from the administration of iodide of potassium. Mercury, even the *hyd. cum cretâ*, so frequently gripes or purges a child, that its use scarcely ever can be continued the necessary length of time; and it should therefore not be recommended, particularly when we have so excellent a plan as that of the mercurial belt.* The nurse should be desired to make a flannel belt, or a flannel roller may be bound round the child's waist. On that portion of the flannel next the skin, a small portion of blue ointment may be applied every day, and the movements of the child tend to produce absorption of the mineral.

Care must be taken not to allow the ointment to get rancid, but cleanliness and warm baths will check any disposition to eczema, which is by no means an uncommon affection, unless due precautions are taken.

The effect of this remedy on the infant is soon very apparent; its general appearance alters for the better, and the eruptions rapidly disappear. Under these circumstances the ointment must be continued; salivation is not to be feared; and as convalescence returns, the quantity may be diminished, but still should be continued for some length of time, in order to avoid all chance of relapse, which is as common in children as in adults. When the remedy has been administered for a sufficient length of time, it is surprising with what little inconvenience to all parties the disease disappears, particularly when a healthy wet-nurse is employed and the mother does not suckle her infant.

In recommending a wet-nurse to be engaged, I have pre-supposed

* Pearson recommended a scruple of mercurial ointment to be rubbed on the child's body nearly every day for five or six weeks. "Children," he adds, "bear mercury so well, that there is less danger of giving too much than too little."—"Man. Lec.," page 102.)

that the parents of the infant are in a position admitting of the expense. In the public practice of dispensaries and hospitals this is out of the question, and the surgeon has then to consider what other course he can pursue. As far as the treatment of the infant is concerned, no doubt ever exists in my own mind, and I always employ the belt, in preference to the use of mercury given internally, for reasons stated above. Even if the mother is very much diseased, I think it better not to treat her with mercury while nursing, but allow the child to take her breast for some few weeks. If mercury be given to the mother, her milk undergoes changes which it is not easy to detect except as far as it produces less nourishment for the infant, which frets, grows thin, and is subject to diarrhoea. As to the old notions of thus affecting the child through the mother's milk, I have long abandoned them for reasons above given. Should the child be brought up on its mother's milk, the disease in the infant declines, provided mercurial frictions be employed ; but in a few weeks it becomes a question for the surgeon to consider, if he had not better, in dispensary and hospital practice, substitute diluted warm cow's milk for the mother's breast ; and if this can be done, the infant should be weaned, and the child may be brought up by hand. But when we consider the great mortality in children so brought up, the surgeon should hesitate before recommending such a course.

As soon as the child can be weaned, the mother should undergo general treatment ; but her case no longer is a special one, and mercury or iodide of potassium must be used on the general principles which regulate our treatment in constitutional syphilis.

CHAPTER VI.

DISEASES RESEMBLING SYPHILIS.

THIS, the concluding chapter, will consist of little more than an enumeration of various diseases which have been, and may still be, mistaken for the different forms of syphilis. It will be needless to enter minutely into their peculiar symptoms and appearances; for, under the head of *diagnosis*, the signs by which each phase of true syphilitic disease can be recognised and distinguished from the various counterfeits, have been already fully given. The subject, indeed, of syphiloid disease, although most interesting, is not within the scope of this work, except in so far as it directly concerns our main subject—true syphilitic affections—and space will not allow of any extended inquiries into matters of merely general interest.

Still, it should never be forgotten, in forming a diagnosis, that there are non-syphilitic diseases which may counterfeit the effects of true syphilis so closely as to deceive all but the most experienced eye. I shall accordingly enumerate them here, referring, when they have been already mentioned in this work, to the pages where such mention occurs.

ULCERS PRODUCED BY DIRT, &c.—Inattention to cleanliness, bad food, and other causes sometimes produce ulcers which at first sight it is difficult to distinguish from chancres. (Introduction, page xxiv.)

ANIMAL POISONS.—Various affections have been produced in the human frame by morbid animal products. These affections are generally distinguished by their virulence, and many of them bear a singular resemblance to the more violent forms of syphilis. Indeed, it has been suggested that the venereal disease must have had some origin of this kind. (P. 279.)

BAD FOOD, SALT PROVISIONS, &c.—The quality of food will frequently produce disease, quite distinct from scurvy, and closely resembling syphilis, even in some of its most peculiar effects. (P. 281.)

SCURVY.—TRUE SCORBUTIC AFFECTIONS are equally likely, especially among sea-faring people, to assume the appearance, and produce some affections resembling venereal disease. (P. 438.)

SCROFULA.—The results of the strumous diathesis are the most difficult to distinguish of all the forms of disease that simulate syphilis. Scrofula so often exists in those constitutions in which venereal disease is likely to assume its most severe forms, and does so often complicate its more urgent symptoms, that to say with certainty what is syphilis and what is struma, is sometimes hardly possible. The

various methods of arriving at conclusions on these obscure questions have been minutely laid down in preceding pages. (Pp. 477, 487.)

LUPUS—CANCER.—These diseases have been mistaken for some of the effects of syphilis, as, for instance, those on the nose, tongue, &c. (Pp. 438, 488, 493.)

LEPROSY has very often been confounded with venereal disease, and not unnaturally: for, as I have stated, I think it by no means unlikely that many of the terrible leprous visitations of which we have records, and much of what is called leprosy in the present day, were and are nothing but syphilis in its secondary and tertiary forms. (Introduction, p. xxv.—*Medical Times*, Jan. 21, 1860.)

BUTTON SCURVY.—I have seen a few cases of this disease, but from drawings and descriptions forwarded me from Dublin, I have little doubt that it is a modification of granulations arising in ulcers, which may be syphilitic. It may consequently be easily mistaken for a form of venereal disease. (P. 441.)

AFFECTIONS DEPENDING UPON MERCURY.—It is often difficult to distinguish symptoms arising from the use of mercury and those caused by syphilis. Numerous examples of this are given in preceding pages. (Pp. 438, 452.)

The above are among the most common syphilitic affections that are to be met with in England. Every now and then, however, some of those affections which occur in foreign countries, and the more distant parts of the British possessions, are met with, and put the surgeon's powers of diagnosis to the test. The following are among the more remarkable of these:—

THE YAWS.—This eruptive ulceration in many respects bears a close resemblance to syphilis. Half the face may be eaten away by this frightful disease. It occurs frequently in the West Indies. For a description of it, see "Schilling Diatribe de Morbo quem Americani vocant 'jaws.'" 8vo. Traj. ad Rhen., 1770. Tucker (Edwardus). De Frambœsia. 8vo. Edinb. 1821.*

SIBBENS or SIVVENS is an affection which has now almost disap-

* Dr. Clark, Deputy-Inspector-General of Army Hospitals, has recently (1860) favoured me with a communication on this disease, in which he seems inclined to think that it is attributable to, or in some way connected with, scrofula. He says:—

"It is remarkable to observe the protean forms of that widely diffused hereditary affection which we call scrofula. In Suffolk it shows itself in the form of lupus, or other cutaneous ulceration; in Norfolk, a neighbouring county, in that of knee-joint disease; in India it produces ulcerations of the feet and toes; and in Tobago it would seem to have selected the nose for its abode. In this island (Tobago) I have seen more people (negroes) without noses than I have ever seen before. I have questioned all the medical practitioners regarding a disease which leads to such disfigurement. Some state that it first commences with pains in the bones, and then in the forehead, followed by discharge from the nose, and destruction of the nasal and palatine bones; others do not notice the pains in the bones. It is a most tedious affection, often ceasing for a time and then breaking out afresh, and is benefited by iodine and arsenic. Is it strumous? is it leprous? is it syphilitic? Most, if not all, agree that it has no connexion with syphilis. Has it any with yaws, and is it but an internal form of that disease, which, not appearing externally on the skin or legs, attacks by ulceration the throat and nose? This disease certainly much resembles a secondary syphilitic affection. I do not feel certain whether yaws itself, so common amongst negroes, is not the African form of struma."

peared from the North of Scotland, but was formerly commonly met with among the poor. As far as I can judge, it was a sort of condylomatous affection which somewhat resembled that form of secondary symptom which we call mucous tubercle, and was believed to be contagious, and to be capable of being communicated from one to another by means of spoons, pipes, and clothes. (See Adams (Jas.), "Observations on Morbid Poisons, Syphilis, Yaws, Sivvens, Elephantiasis, &c." 4to. Lond. 1807.—Hill (Jas.), "Cases in Surgery, with Account of the Sibbens." 12mo. Edinb. 1772.—Freer (Adam), "De Syphilide Venereâ, necnon de Morbo Sibbens." 8vo. Edinb. 1767.)

RADESYGE—is another affection closely resembling syphilis, that is extensively met with in Norway. It probably arises from bad ventilation, bad food, cold, want, scurvy, scrofula, and perhaps the injudicious employment of mercury. (See Holst. (Frederik), "Commentatio, Morbus Radesyge." 12mo. Christianæ, 1817.—Hünefeld (F. Ludwig), "Die Radesyge, oder das Scandinavische Syphiloid." 8vo. Leipzig, 1828.

Dr. Livingston, in his late "Travels in Africa," speaks of a disease called

MANASSAH.—He says, "*A certain loathsome disease, which decimates the North American Indians, and threatens extirpation to the South Sea Islanders, dies out in the interior of Africa without the aid of medicine: and the Bangwaketse, who brought it from the west coast, lost it when they came into their own land south-west of Kolobeng. It seems incapable of permanence in any form in persons of pure African blood anywhere in the centre of the country. In persons of mixed blood it is otherwise; and the virulence of the secondary symptoms seemed to be, in all cases that came under my care, in exact proportion to the greater or less amount of European blood in the patient. Among the Coramas and Griquas of mixed breed it produces the same ravages as in Europe. Among half-blood Portuguese it is equally frightful in its inroads on the system; but in the pure Negro of the central parts it is quite incapable of permanence. Among the Barosse I found a disease called 'Manassah,' which closely resembles that of the 'fœda mulier' of history.*"—(Dr. Livingstone's "Travels in Africa.")

It might possibly happen that a closer investigation of these affections would result in the discovery of the origin of the specific virus which all our experiments and inquiries in Europe have failed to detect. It is a field worthy of exploration, and careful inquiry might lead to valuable and interesting results, if the last could be undertaken on the spot by any one intimately acquainted with the laws, phenomena, and history of syphilis in Europe.

FORMULARY.

CAUSTIC INJECTION IN PHYMOSIS.

M. ft. Inject.	R	Argent. Niträt. Crystal	ʒss.	(See page 44.)
		Aquæ	ʒiij.	

CUBEB AND ALUM POWDER IN GONORRHOEA.

M. ft. Pulv.	R	Pulv. Cubebæ	ʒj.	(See page 64.)
		Pulv. Aluminis	ʒj.	
	Cap.	Coch. Minim. j. ter die.		

CUBEB AND IRON POWDER IN GONORRHOEA.

M. ft. Pulv.	R	Pulv. Cubebæ	ʒj.	(See page 64.)
		Ferri Sesquioxidi	ʒj.	
	Cap.	Coch. Minim. j. ter die.		

CUBEB AND COPAIBA IN GONORRHOEA.

Cap. Coch. Minim. j. ter die.	R	Pulv. Cubebæ	ʒiiss.	(See page 64.)
		Bals. Copaibæ	ʒvj.	
		Ol. Menthæ	℥xxiv.	

COPAIBA AND CUBEB PASTE.

M. ft. Electuarium.	R	Pulv. Cubebæ	ʒiiss.	(See page 65.)
		Bals. Copaibæ	ʒss.	
		Theriaceæ	ʒv.	
		Ext. Hyoscyami	ʒss.	
		Magnes. Calcinat.	ʒiiss.	
		Pulv. Camphoræ	ʒj.	

COPAIBA PASTE.

M. ft. Electuarium.	R	Bals. Copaibæ	ʒvj.	(See page 65.)
		Magnes. Calcinat.	ʒiiss.	
		Ext. Hyoscyami	ʒss.	
		Pulv. Camphoræ	ʒj.	
		Theriaceæ	ʒiij.	
		Micæ Panis	ʒiiss.	
	Cap.	Coch. Min. j. ter die.		

LEAD INJECTION IN GONORRHOEA.

M. ft. Inject.	R	Liquor Plumbi Diacet.	ʒiij.	(See page 66.)
		Aquæ destill.	ʒiij.	

CAMPBOR PILLS FOR CHORDEE.

M. ft. Pil. xx.	R	Pulv. Camphoræ	ʒss.	(See page 69.)
		Ext. Lactucæ	ʒij.	
	Cap.	iv. vel. vj. omni Nocte,		

OPIUM SUPPOSITORIES IN CHORDEE.

M. ft. Supposit. j. omni Nocte adhibend.	R	Pulv. Opii	gr. j.	(See pages 69, 78.)
		Butyrii Theobromæ Cacaonis	gr. x.	

BROMIDE OF POTASSIUM IN CHORDEE.

℞ Potassii Bromidi 3ss.
 Sacchari Albi ʒiij.

M. et divid. in pulv. xij. Cap. j. omni secundâ horâ.

(See page 69.)

ESSENCE OF SPRUCE IN GLEET.

℞ Ess. Abietis Nigr. Inspiss. ʒij.
 Mag. Carb. q. suff.

M. ft. Pil. xxx. Cap. ij. bis vel ter in die.

(See page 77.)

INJECTION IN GLEET.

℞ Zinci Sulph.
 Acid. Tannici ʒā gr. ij.
 Aquæ ʒij.

M. ft. Injectio.

(See page 76.)

SALINE DRAUGHTS IN AFFECTIONS OF THE BLADDER.

℞ Potass. Bicarb. ʒj.
 Syr. Aurant. ʒj.
 Aquæ destill. ʒiss.

M. ft. Haust. cum succi limonum coch. uno magno bis terve quotidie. (See page 178.)

EFFERVESCENT DRAUGHT IN AFFECTIONS OF THE BLADDER.

℞ Potass. Bicarb. ʒj.
 Syrup. Aurant. ʒss.
 Aquæ destill. ʒiss.

M. ft. Haust. cum pulv. acid. citrici gr. xiv. in statu effervescentiæ bis vel ter quotidie sumend. (See page 178.)

ACID MIXTURE IN AFFECTIONS OF THE BLADDER.

℞ Acid. Nitrici, dilut.
 Acid. Hydrochlorici dilut. ʒā gutt. xx.
 Aquæ ʒiv.

M. ft. Mist. sumat. 4tam partem bis quotidie.

(See page 178.)

SPRUCE BEER IN AFFECTIONS OF THE BLADDER.

℞ Essence of Spruce ʒiij.
 3 Lemons, sliced.
 Sugar 1bj. ʒxij.
 Boiling Water 2 galls.

Let stand till cold, filter, and bottle.

(See page 179.)

CAUSTIC INJECTION FOR CYSTORRHOEA.

℞ Argent. Nitrat. ʒij.
 Aquæ destill. ʒiv.

M. ft. Inject.

(See page 180.)

VIENNA PASTE.

℞ Caustic Lime ʒv.
 Caustic Potash ʒvj.

M. ft. pulv.

(See page 254.)

BELLADONNA IN INCONTINENCE IN CHILDREN.

℞ Ext. Belladonnæ gr. iiss.
 Alcohol ʒss.
 Syrup Tolutani ʒj.
 Aquæ destill. ad ʒv.

M. ft. Mist. Cap. Coch. Minim. j. ter die.

(See page 182.)

VAGINAL INJECTIONS.

R Pulv. Aluminis ʒvj.
 Pulv. Zinci Sulph. ʒvj.
 Misce et divid. in pulv. xij. One to be mixed in a pint of water.

(See page 195.)

LOTION FOR THE EYE.

R Pulv. Alum. gr. xvj.
 Liquor Opii Sedativ. ʒiiss.
 Aquæ Sambuci ʒvj.
 M. ft. Lot.

(See page 234.)

WART POWDER.

R Pulv. Æruginis,
 Pulv. Sabinæ ss ʒss.
 M. ft. Pulv.

(See page 253.)

IRON MIXTURE.

R Fer. Potass. Tart. ʒj.
 Aquæ ʒvj.
 M. ft. Mist., ejus cap. Coch ij. min. ter die.

(See page 323.)

PROTOIODIDE OF MERCURY PILLS.

R Hydrargyri Protoiodidi,
 Ext. Lactucæ ss ʒss.
 Gum. Opii gr. ix.
 Guaiaci ʒj.
 M. ft. Pil. xxx. Cap. j. nocte maneque.

(See page 356.)

CHLORATE OF POTASH IN SALIVATION.

R Pulv. Potass. Chloratis ʒss.
 Divide in Pulv. viij. Cap. j. ter die ex cyatho amplo aquæ.

(See page 362.)

OINTMENT FOR SKIN AFFECTIONS.

R Hyd. Subsulphat. ʒss.
 Unguent. Cetacei ʒss.
 M. ft. Unguent.

(See page 432.)

TAR OINTMENT IN LEPRO.

R Hydrargyri Subsulphat. gr. xv.
 Ol. Juniperi Pyroligni ʒiiss.
 Adipis ʒj.
 M. ft. Unguent., more dictu utend.

(See page 432.)

WASH FOR CONDYLOMATA.

R Liq. Sodæ Chlorinat. ʒij. ad ʒss.
 Aquæ ʒviij.
 M. ft. Lot.

(See page 434.)

LOTION FOR THE HAIR.

R Ol. Ricini,
 Spirit Rectificati,
 "Eau de Cologne" ss ʒ.
 M. ft. Lot.

(See page 444.)

POMATUM FOR THE HAIR.

R	Adipis præp.	.	.	.	℥j.
	Tinct. Cantharidis	.	.	.	℥ij.
	Ol. Rorismarini,				
	Ol. Lavandulæ	.	.	.	ss gutt. x.
	Ess. Jasmini	.	.	.	℥j.

M. ft. Unguent. Sig. pomade for the hair. (See page 445.)

OIL FOR THE HAIR.

R	Ol. Olivæ	.	.	.	℥ss.
	Unguent. Hyd. Nitrat.	.	.	.	℥j.

M. ft. Liniment. To be kept in well-corked bottles. (See page 445.)

GARGLES.

R	Acidi Hydrochlorici diluti	.	.	.	℥j.
	Decoct. Cinchonæ Cordifoliæ	.	.	.	℥iv.

M. ft. Gargarisma. (See page 455.)

Or M. Ricord's favourite gargle may be employed :—

R	Infus. Cicutæ	.	.	.	℥vij. (fol. ℥ij. ad ℥viij.)
	Hyd. Bichlorid.	.	.	.	gr. iij.

M. ft. Gargarisma. (See page 455.)

IODIDE OF POTASSIUM AND BITTERS.

R	Potassii Iodidi	.	.	.	℥v.
	Tinct. Gent. Co.	.	.	.	℥ij.
	Syrup. Simpl.	.	.	.	℥xiv.

M. ft. Mist., sumat coch. mag. unum ex cyatho amplo (a small tumbler) infus. quassia ter die. (See page 478.)

BITTER INFUSIONS.

R	Ras. Quassia	.	.	.	℥ij.
---	--------------	---	---	---	------

Pro infus. Mitte chart. vj.

Put the contents of one of these papers into a jug, and add a pint of boiling water ; let the infusion stand two hours, strain and drink at three draughts, having put into each small tumbler of the fluid one table-spoonful of the syrup. (See p. 478.)

IODIDE OF POTASSIUM.

R	Potassii Iodidi	.	.	.	℥ss.
	Aquæ	.	.	.	℥iv.

M. ft. Mist., cujus cap. Coch. min. j. ter die. To be taken in beer, tea, or soda-water. (See page 479.)

FOR TERTIARY ULCERS.

R	Mellis	.	.	.	℥vj.
	Hydrargyri Protoiodidi	.	.	.	℥iv.

The same effects will be obtained if the margin of the ulcer be touched with the following solution of iodine :—

R	Tinct. Iodinii	.	.	.	℥ij.
	Aquæ destill.	.	.	.	℥viij.

M. ft. Lot. (See page 491.)

FACE POWDER FOR DISGUIISING BLOTCHES ON THE SKIN.

R	Bismuthi Trisnitratis	.	.	.	℥j.
	Plumbi Chromati.	.	.	.	gr. vii.
	Carminii	.	.	.	gr. ij.

According to the complexion, a little more or little less carmine may be used.

A small quantity to be mixed with a little water on a saucer, and applied with a camel's-hair pencil.

ARSENICAL AND MERCURIAL PREPARATION IN LUPOID AFFECTIONS OF THE FACE.

R Lij. Hydriodat. Arsenici c. Hydrarg.
 (Donovan) ℥ij.
 Syrupi Aurant.,
 Tinct. Aurant. aa ℥ss.
 Aquæ destill. ad ℥vj.

M. ft. Mist., sumat Coch. amplum bis die post cibum ex cyatho aquæ.

TRISNITRATE OF BISMUTH INJECTION IN GONORRHOEA.

R Bismuthi Trisnitratis. ℥ss.
 Aquæ Rosæ ℥iiss.
 Mist. Acaciæ ℥ss.

Ft. Injectio.

PHOSPHORIC ACID IN DEBILITY.

R Acidi Phosphorici Diluti, .
 Syrupi Zingiberis,
 Syrupi Aurantii aa ℥j.

M. ft. Mistura. Capiat cochleare min. bis die (at 11 and 4) ex cyatho vinario aquæ.

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